Pacific Salmon Commission

2005/2006 Twenty First Annual Report

Pacific Salmon Commission

Established by Treaty between Canada and the United States March 18, 1985 for the conservation, management and optimum production of Pacific salmon

Twenty First Annual Report 2005/2006

Vancouver, B.C.
Canada

March 2008

PACIFIC SALMON COMMISSION

ESTABLISHED BY TREATY BETWEEN CANADA
AND THE UNITED STATES OF AMERICA
MARCH 18, 1985

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Letter of Transmittal

In compliance with Article II, Paragraph 14 of the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific salmon, it is my pleasure as Chair of the Pacific Salmon Commission to present my compliments to the Parties and to transmit herewith the Twenty First Annual Report of the Commission.

This report summarizes the activities of the Commission for the fiscal year April 1, 2005 to March 31, 2006. It includes reports on the results of the 2005 fishing season presented by the Parties and on meetings of the Commission and the Standing Committee on Finance and Administration. Also included are the annual reports of the Northern and Southern Fund Committees. Executive summaries of documents prepared by Pacific Salmon Commission staff and the joint technical committees during the period covered by this report are also presented.

A summary of the agreement is available on the PSC website: www.psc.org.

Yours truly,

Mr. Larry Rutter
Chair

PACIFIC SALMON COMMISSION

OFFICERS for 2005/2006

Chair	Mr. Larry Rutter
Vice-Chair	Mr. Paul Sprout

COMMISSIONERS

United States	Canada
Mr. Ron Allen	Mr. Ron Fowler
Mr. David Bedford	Mr. Gerry Kristianson
Mr. Larry Cassidy	Mr. Arnie Narcisse
Mr. James Bacon	Mr. Garnet Jones
Mr. David Balton	Mr. Russ Jones
Mr. Olney Patt Jr.	Mr. Paul Kariya
Mr. Rollie Rousseau	Mr. Paul Macgillivray

SECRETARIAT STAFF

Executive Secretary	Mr. Don Kowal
Administrative Officer	Mr. Ken Medlock
Chief Biologist	Mr. Mike Lapointe

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INTRODUCTION

Interception of Pacific salmon bound for rivers of one country in fisheries of the other has been the subject of discussion between the Governments of Canada and the United States of America since the early part of this century. Intercepting fisheries were identified through research conducted by the two countries on species and stocks originating from Alaska, British Columbia, Washington, Oregon and Idaho. The results of this research identified that Alaskan fishers were catching salmon bound for British Columbia, Idaho, Oregon and Washington. Canadian fishers off the West Coast of Vancouver Island were capturing salmon bound for rivers of Washington and Oregon. Fishers in northern British Columbia were intercepting salmon returning to Alaska, Washington, Oregon and Idaho, and United States fishers were catching Fraser River salmon as they traveled through the Strait of Juan de Fuca and the San Juan Islands towards the Fraser River.

Management of stocks subject to interception became a matter of common concern to both Canada and the United States. A mechanism to enable the countries to reap the benefits of their respective management and enhancement efforts was required. That mechanism is now provided through the Pacific Salmon Treaty, which entered into force upon the exchange of instruments of ratification by the President of the United States of America and the Prime Minister of Canada on March 18, 1985.

The Pacific Salmon Commission, guided by principles and provisions of the Treaty, establishes general fishery management regimes for international conservation and harvest sharing of intermingling salmon stocks. Each country retains jurisdictional management authority but must manage its fisheries in a manner consistent with the provisions of the Treaty. Implementation of the principles of the Treaty should enable the United States and Canada, through better conservation and enhancement, to prevent overfishing, increase production of salmon, and ensure that each country receives benefits equivalent to its own production. The Commission also serves as a forum for consultation between the Parties on their salmonid enhancement operations and research programs.

The organizational structure of the Commission is currently focused on four geographically oriented panels. The terms of new Treaty arrangements signed by the Parties in June, 1999 provided for the creation of a new Transboundary Panel. The Transboundary Panel's stocks of concern originate from the Alsek, Stikine and Taku River systems. The Northern Panel's stocks of concern are those which originate in rivers situated between Cape Suckling in Alaska and Cape Caution in British Columbia. The Southern Panel's stocks of concern are those which originate in rivers located south of Cape Caution, other than Fraser River sockeye and pink salmon. The Fraser River Panel has special regulatory responsibilities for stocks of sockeye and pink salmon originating from the Fraser River.

The functions of panels are to review annual post-season reports, annual pre-season fishing plans and ongoing and planned salmonid enhancement programs of each country, and to provide recommendations to the Commission for development of annual fishery regimes in accordance with the objectives of the Treaty. These plans, once adopted by the Commission and the governments, are implemented by the management agencies in each country.

The Fraser River Panel, in addition, has been accorded special responsibility for in-season regulation of Fraser River sockeye and pink fisheries of Canada and the United States in southern British Columbia and northern Puget Sound, in an area designated as Fraser River Panel Area Waters. Scientific and technical work is conducted for the Panel by the Fishery Management Division of the Commission's Secretariat staff.

Negotiations designed to lead to agreed fishery regimes were conducted at the government-to-government level commencing in the spring of 1998. A comprehensive agreement was reached by the Parties on June 30, 1999.

As a result of the agreement, long-term fishing arrangements are in place for ten years, except for Fraser River sockeye and pink salmon, which is a 12-year arrangement.

With fishery arrangements in place, the meeting agendas for the Commission have concentrated on implementation of the elements of the new arrangements that will improve fisheries management and aid the countries efforts to recover weakened stocks. These provisions include establishment of two bilaterally-managed restoration and enhancement funds, provisions to enhance bilateral cooperation, improvements to the scientific basis for salmon management and application of institutional changes to the Pacific Salmon Commission.

On December 4, 2002, the Parties signed an international agreement detailing a cooperative approach to conservation of salmon stocks originating in the Yukon River in Canada. The agreement will be included as an Annex of the Pacific Salmon Treaty. As such, the Yukon River Salmon Agreement is separate from the Pacific Salmon Treaty because it sets out a distinct regime for Yukon River salmon, while adhering to the broad science-based management principles of the Pacific Salmon Treaty.

The Commission meets at least once annually and conducts its business between meetings through its permanent Secretariat located in Vancouver, British Columbia. In the period April 1, 2005 to March 31, 2006, the Commission met on four occasions:

1. Commission Executive Session
   October 18-20, 2005 – Juneau, Alaska

2. Post-Season Meeting of the Commission and Panels
   January 9-13, 2006 – Portland, Oregon

3. Twenty-First Annual Meeting of the Commission
   February 13-17, 2006 – Vancouver, B.C.

This, the Twenty-First Annual Report of the Pacific Salmon Commission, provides a synopsis of the activities of the Commission and its subsidiary bodies during its Twenty-first fiscal year of operation, April 1, 2005 to March 31, 2006.

Activities of the Commission

PART I
ACTIVITIES OF THE COMMISSION

A. EXECUTIVE SESSION OF THE PACIFIC SALMON COMMISSION
October 18-20, 2005, Juneau, Alaska

The Commission met three times in bilateral executive session during this meeting.

The U.S. section presented a proposal for the establishment of a Habitat and Restoration Technical Committee. Canada provided initial comments on the proposal and planned to come forward with a formal, substantive response during the January session.

The Southern Panel reported on its review of the utility of the annual enhancement reports submitted each year by both Parties. The Panel tried to determine if there was a better process to follow in providing information on enhancement activities each year. The Panel's principle recommendation was that standardized reporting formats should be developed. It was agreed that the Southern Panel's recommendations be passed on to the other three Panels for comment. The Commission would decide how to proceed in January.

The roster of PSC Commission Officers for 2005/2006 was tabled.

Dr. David Hankin, Chair of the Expert Panel (EP) on the Future of the Coded Wire Tag (CWT) Recovery Program for Pacific Salmon, presented an overview of the Panel's activities and of its final report. He hoped to have final editorial changes made to the Report by November. It was agreed that the Report would then be posted on the Commission's website along with the agencies' comments about the Report. The Expert Panel would then be dissolved.

Commissioner Kristianson presented a report on behalf of the Chinook Interface Group regarding Northern British Columbia and West Coast of Vancouver Island AABM chinook fisheries. The document set out a set of ten specific assignments to the Chinook Technical Committee (CTC). The Commission endorsed the document.

The Commission was presented with the annual work plans of its Panels and Committees. The workplans were discussed, revised, and approved.

The Executive Secretary was directed to transmit the Commission's instructions regarding the work plans to the Panels and Committees.

B. MEETING OF THE COMMISSION AND PANELS
January 9-13, 2006, Portland, Oregon

Canada provided a verbal response to the proposal tabled by the U.S. in October on habitat and restoration. Canada sought clarification on several aspects of the proposal and planned to table a more formal response at the February session.

The Parties tabled their 2005 Post Season Reports.

Dr. Brent Hargreaves and Dr. Gary Morishima, Co-Chairs of SFEC, appeared before the Commission on behalf of the Committee. They reported on SFEC's progress in reviewing Mass Marking (MM) and Mark Selective Fishery (MSF) proposals for 2006, provided a list of Committee issues and concerns, and gave an update of SFEC's activities not related to proposal reviews.

Dr. Laura Richards and Mr. Steve Pennoyer of the Committee on Scientific Cooperation (CSC) appeared before the Commission. They outlined the activities of the CSC which focused upon providing comment on microsatellites vs. SNPs technology for genetic stock identification; on following the results of late-run Fraser sockeye studies; and on work surrounding the Report of the Expert Panel on the CWT system.

The Commission discussed the Report of the Expert panel on the Coded Wire Tag System. Both Parties required more time to study the reports final recommendations. The Commission would discuss the Report further at its February meeting.

Commissioner Shelton of the Chinook Interface Group (CIG) reported on a review of the Chinook Technical Committee's (CTC) workplan, including a summary of the activities of the CTC's workgroup on total mortality and on the ten tasks surrounding AABM fisheries assigned at the October Commission meeting.

The Commission received progress reports on the workplans of the Northern Panel and the Southern Panel. The Southern Panel expected to report further about recommended reforms to the Parties' annual enhancement reports in February.

C. PACIFIC SALMON COMMISSION ANNUAL MEETING
February 13-17, 2006, Vancouver, B.C.

The Commission met in five bilateral executive sessions during this meeting period.

Canada presented its response to the U.S. proposal for a Habitat and Restoration Technical Committee (HRTC), which was tabled at the Commission's January session. The U.S. discussed Canada's response in its National Section and agreed to Canada's revisions.

The Commission adopted the "Agreement on Establishing a Habitat and Restoration Technical Committee."

Mr. Angus Mackay, Endowment Fund Coordinator, presented the "Annual Report of the Southern Boundary Restoration and Enhancement Fund and the Northern Boundary and Transboundary Rivers Restoration and Enhancement Fund for the year 2005." The Report included an executive summary and sections titled Investment Review, 2005 Project Funding, Joint Fund Committee Meetings, Southern Fund Committee Meetings, Site Visits, Northern Fund Committee Meetings, 2005 Call for Proposals for Projects in 2006/07 and Committee Appointments.

Dr. Laura Richards, Chair of the Committee on Scientific Cooperation (CSC), presented the Committee's annual report. The three main areas of concern for the CSC during the year were late-run Fraser River sockeye studies, the Coded Wire Tag Expert Panel Report, and a task assigned to the CSC focusing on genetics.

Dr. David Welch reported on the Pacific Ocean Shelf Tracking (POST) project.

The Commission discussed the follow-up steps that it would take regarding the Coded Wire Tagging (CWT) Expert Panel Report.

The U.S. tabled a draft proposal for an implementation plan in response to the CWT Expert Panel recommendations. The paper proposed the establishment of a work group composed of scientists from within the PSC process which would address the short and long-term tasks related to the Expert Panel's recommendations.

The Parties discussed the proposal in National Sections and bilaterally. It was agreed that priority would be given to implementing the first four recommendations at this time. The Commission would discuss the implementation of the remaining recommendations during the October 2006 session.

Commissioner Kristianson reported that the Chinook Interface Group (CIG) received the first draft of the report prepared by the Chinook Technical Committee (CTC) on the assignment given to the Committee in October. It was hoped that the final report would be complete by early May.

Executive Secretary Kowal presented the report of the Standing Committee on Finance and Administration. The Commission approved the proposed 2006/2007 Commission budget.

Mr. Williams and Mr. McEachen, Chair and Vice Chair of the Southern Panel reported that the Panel had reached an agreement on a revised Chum Annex. The Commission approved the revised Annex.

Mr. Williams and Mr. McEachen presented the Southern Panel's recommendations about revisions to the Parties' annual enhancement reports. The Southern Panel consolidated the comments from the other three Panels about the utility of the annual enhancement reports. The Panels concurred that the reports should be condensed, made more useable and more consistent on both sides, and that they should centre upon issues of major significant change. The result would be more useable and understandable annual enhancement reports.

The Commission adopted the Southern Panel Enhancement Report recommendations.

The Commission adopted the Transboundary Panel's bilateral recommendation for proposed change to U.S. subsistence arrangements for Stikine River sockeye salmon, dated January 12, 2006.

Activities of the Standing Committees

PART II
ACTIVITIES OF THE STANDING COMMITTEES

A. MEETINGS OF THE STANDING COMMITTEE ON FINANCE AND ADMINISTRATION

1. Committee Activities

The Committee met on December 15, 2005 in Vancouver, BC ,January 12, 2006 in Portland OR in and February 16, 2006 Vancouver, BC to consider a range of financial and administrative issues. The Committee's deliberations the focus was primarily on a review of the Commission's current budget proposals for FY 2006/2007 and a budget forecast for FY 2007/2008 and beyond.

The Committee approved the Commission budget at the contribution level of C$1,746,783 per party (Appendix B) with expenditures of C$3,635,882. This represents a change in contribution per party over last year of $201,276. The Committee **recommended** acceptance of this budget. The major change in the new budget is the addition of an expanded hydroacoustic program in 2006/2007. The Southern Boundary Restoration and Enhancement Fund will be funding much of the initial setup of this program. During the Finance and Administration meetings it was indicated that cuts to programs had already been made in order to produce this budget.

The Committee reviewed the status of the revolving test-fishing fund and approved the staff recommended transfer from the fund to general revenues to cover losses in the test-fishing operation. The loss was incurred as the Pacific Salmon Commission test fish vessels were directed to release pay fish in order to lessen late run impacts.

The Committee also reviewed staff projections of expenditures for the balance of the current fiscal year. The staff reported a forecast carry-over of C$127,315 to next year. It was **recommended** that the carryover from 2005/2006 be carried to fiscal 2006/2007 to offset costs of programs initiated in this fiscal year.

The Executive Secretary reviewed the projected budgets for 2007/2008 and 2008/2009.

The Committee reviewed the meeting schedule and accepted the proposal to have the October 21-23, 2008 Executive Session in a Canadian location, perhaps Victoria. The Committee reviewed the meeting dates through October 2010. The following dates and locations were approved.

PSC Post-Season	January 12-16, 2009	Vancouver, BC
PSC 24th Annual	February 9-13, 2009	Portland, OR
PSC Executive Session	October 20-22, 2009	US Alaska location
PSC Post-Season	January 11-15, 2010	Vancouver, BC
PSC 25th Annual	February 8-12, 2010	Portland, OR

With the Winter Olympics in Vancouver in February 2010 it was reported that our meeting which would normally be in Vancouver in February will have to be moved as space in Vancouver at that time will either be unavailable or too expensive. The first option will be to reverse the order of the Portland and Vancouver meetings for the year 2010. However, staff were also given discretion in choosing the location of the January 11-15, 2010 post season meeting as Vancouver may not be a viable location, also because of the Olympics. Alaska members will advise at a later date the proposed site for the October 20-22, 2009 meeting.

The committee passed a resolution which allows the Executive Secretary and the Controller to enter into borrowing resolutions for the purposes of acquiring credit cards for the staff of the secretariat of the Commission. This is limited to a total of C$100,000.00 and will be secured by a term deposit to the bank. The Committee **recommended** acceptance of this resolution.

2. Secretariat Staffing Activities

A list of Secretariat staff employees as of March 31, 2006 is presented in Appendix E.

An updated membership list for panels, standing committees, joint technical committees and ad hoc working groups as of March 31, 2006 is presented in Appendix F.

B. MEETINGS OF THE STANDING COMMITTEE ON SCIENTIFIC COOPERATION

The activities of the Committee on Scientific Cooperation focused upon following the results of late-run Fraser sockeye studies, on work surrounding the Report of the Expert Panel on the Coded Wire Tag system, and on providing comment on microsatellites vs. SNPs technology for genetic stock identification.

In January 2006, the CSC reported on its analysis of two different and sometimes competing technologies for genetic stock identification. In that report, the CSC noted that comparisons between SNP and microsatellite technologies are ongoing. Although the CSC believes that it makes good common sense to apply recent advances in microsatellite standardization for chinook salmon and to use the existing microsatellite databases where available, the Committee will monitor the development and application of the newer SNP technology. This includes the testing of SNP technology in genetic stock identification that is being carried out by several labs. The CSC would be prepared to comment on these developments at a future meeting.

C. MEETINGS OF THE NORTHERN AND SOUTHERN FUND COMMITTEES

In the fiscal year 2005/06 the Northern and Southern Fund Committees agreed that given the congruent nature of their agendas; global economic conditions and the status of the Fund, it was appropriate to meet not separately, but together as a Joint Fund Committee.

The first meeting of the fiscal year was an in-person meeting held at the PSC offices in Vancouver, on May 19th & 20th, 2005. A motion was passed accepting the recommendation of the investment manager selection sub-committee of the Joint Committee and the recommendation of Mr. John Myrah that the firm LSV Asset Management be chosen to manage the Fund's EAFE portfolio. Mr. Myrah then led the Committee through a review of the draft updated Statement of Investment Policies and Procedures and took comments and edits. Finally as an information item, Mr. Myrah briefed the Committee on some alternative investment possibilities including real estate, private equity and hedge funds. On the second day of the meeting the Joint Committee members discussed overlapping Northern and Southern program operational issues including that of the sharing of tissue sample data between labs conducting DNA projects supported by Fund Committee grants. The Northern and Southern Fund Committees also met separately.

The other Joint Fund Committee meeting of the fiscal year was an in-person meeting held at the PSC offices in Vancouver, BC on November 16th and 17th, 2005. As usual the November meeting agenda comprised the annual Fund investment manager performance reports and interviews. The Committee was generally satisfied with the performance and reports from Barclays Global Investors; from Brandes Investment Partners and from LSV Asset Management. Hewitt and Associates staff provided their third quarter report. Mr. John Myrah reviewed a second draft of the Statement of Investment Policies and Procedures. Final edits were provided by the Committee and Mr. Myrah agreed to provide a final version early in 2006. The Committee also discussed issues arising from the funding of genetic stock identification projects. Principal topics of discussion were: what is the appropriate technology to be supporting in this field, microsatellites or SNP's; how to ensure or enforce data sharing between GSI labs and lastly, whether it would be practical or possible to develop a procedure whereby the Northern and Southern Funds could jointly support GSI projects that would provide benefits to both northern and southern fisheries managers. Mr. Ken Medlock then presented the 2006 budget for the combined Northern and Southern Funds. Of note was a request to increase the budget for Fund administrative staff from one staff member and a one half equivalent to two staff members and one whole equivalent in response to the growing workload for administering Fund operations. The request was debated and a motion passed approving the change. A second motion was passed approving the 2006 budget.

Mr. Mike Griswold was appointed by Canada to the Southern Fund Committee in the capacity of Fraser River Panel representative on May, 19th 2005, replacing Mr. Bill Otway. Mr. Wilf Luedke's appointment for Canada to the Southern Fund Committee, was confirmed, replacing Mr. Ron Kadowaki, upon whose behalf he had been acting.

Ms. Lorelei Smith was appointed by Canada to the Northern Fund Committee in the capacity of Transboundary Panel representative in October 2005, replacing Mr. Gord Zealand. Mr. Doug Mecum was appointed by the U.S. to the Northern Fund Committee late in 2005, acting for Mr. Jim Balsiger.

Southern Fund Committee approved support for a total of 46 projects for U.S. $3.17 million or CAN $3.74 million. Proponents included Canadian and U.S. government agencies, First Nations, tribes, and community watershed stewardship groups from B.C. and Washington and Oregon States. The Northern Fund Committee announced its support for a total of 28 projects for U.S. $2.88 million or CAN $3.59 million. Proponents included seven First Nations from northern B.C. and the Yukon; collaborative projects co-managed by Fisheries and Oceans Canada and the Alaska Department of Fish and Game and a range of other habitat restoration and fisheries management projects led by Fisheries and Oceans Canada, the Alaska Department of Fish and Game, NOAA Fisheries and two community watershed stewardship groups. A list of all 2005/06 Northern and Southern Fund projects can be found in Appendices A and B.

Activities of the Panels

PART III
ACTIVITIES OF THE PANELS

A. FRASER RIVER PANEL

The Fraser River Panel completed the 2005 fishery management plan for Fraser River sockeye and pink salmon in Panel Area waters on June 23, 2005. The Panel carried out its in-season fishery management responsibilities as per Annex IV, Chapter 4. Commission staff conducted its regular in-season assessment programs and reported results to the Panel.

The Panel met in bilateral session during the January and February 2006 meetings of the Commission to review the results of the 2005 fishing season, to receive reports from Canada on spawning escapements and to discuss issues of concern for the 2006 fishing season. Commission staff reviewed the concerns regarding the potential for continued early upstream migration behaviour of Late-run sockeye and identified specific areas of fishery impacts.

B. NORTHERN PANEL

The bilateral Northern Panel met at the PSC Post Season meeting in Portland, Oregon in January 2006. Fishery managers of both parties presented information on 2005 treaty-related fisheries and stock status in the Northern Boundary area. The final 2003 sockeye run reconstruction report from the Northern Boundary Technical Committee (NBTC) was reviewed and approved by the Panel. The NBTC and Karl English from the consulting firm LGL presented the 2004 sockeye run reconstruction report for Panel review.

As provided in paragraph 5 of Annex IV, Chapter 2 of the 1999 Agreement, the Panel initiated discussion on the renewal of the provisions of Annex IV, Chapter 2. Further discussion was deferred pending instructions from the Commission for the renegotiation process.

The Panel reviewed, discussed and provided some comments on the final round of Northern Fund projects that are pending before the Northern Fund Committee. Initial discussions were held regarding priorities for the 2007 Northern Fund solicitation.

The bilateral Northern Panel also met at the PSC Annual Meeting in Vancouver B.C. in February 2006. The NBTC sockeye run reconstruction report for 2004 was approved. DFO personnel provided a presentation on Canada's Wild Salmon Policy and it was discussed by the Panel.

The list of the Northern Fund proposals that were recently approved for funding by the Northern Fund Committee was reviewed. The Panel developed revised guidance to the Northern Fund Committee for the 2007 proposal solicitation process.

C. SOUTHERN PANEL

The Southern Panel met in bilateral session during the January and February 2006 meetings of the Commission. The Panel's agenda for these sessions was defined by the 2005-2006 Southern Panel work plan:

Post-Season Review: The Panel conducted a detailed review of the 2005 coho, chinook and chum returns, fishery performance, special conservation actions and escapement levels, working with members of the Coho, Chinook and Chum Technical Committees.

Chum: The Panel reviewed the results of implementing the agreement entitled "Commission Guidance to the Southern Panel on the Management of Southern Chum Fisheries" at the January session. This management approach was found to be successful at achieving intended goals. The Panel then worked to incorporate the plan into Treaty language for consideration by the Commission. The changes in Treaty language were agreed to at the conclusion of the February Annual meeting.
The Southern Panel also instructed the Chum Technical Committee Co-chairs to continue developing the unfinished technical components of this agreement for explicate purpose of preparing for the Pacific Salmon Treaty renewal in 2008.

Chinook: As part of the post season review the Panel continued to discuss the WCVI troll fishery on southern Chinook stocks, with a view toward improving US pre-season fishery planning effectiveness. Members of the Southern Panel also participated in activities of the Chinook Interface Group associated with this issue for the purpose of informing and involving the Panel.

Coho: One again this year the Panel had a goal of putting more emphasis on the issues surrounding the implementation of the Southern Coho Management Plan. The Coho Working Group met in December of 2005 to discuss progress of the work defined by the Coho Technical Committee's Work Plan, in preparation to the Commission meetings in January and February 2006. During the post-season and annual Commission meetings, the Panel discussed status of work defined by the Coho Technical Committee's Work Plan, focusing on priority obligations for successful implementation of the Southern Coho Management Plan. Presentations by the Coho TC informed the Southern Panel of the status of work plan tasks, including work to upgrade the Coho FRAM and related work being conducted as projects supported by the Southern Endowment Fund.

Enhancement report: The Southern Panel was directed to collate the comments and suggestions from the other panels regarding the recommendations to the Commission for improvements to the Enhancement Report. These recommendations were collated and submitted to the Commission.

Southern Endowment Fund: In the February meeting the Panel discussed creating a small group to review Southern Panel priorities and recommendations for funding under the Southern Endowment Fund. This small group developed these priorities and submitted the recommendations to the Southern Endowment Fund committee in the spring of 2006.

D. TRANSBOUNDARY PANEL

The Transboundary Panel met extensively in bilateral session during the January and February 2006 meetings of the Commission. During bilateral sessions, the panel received several reports by staff of the Alaska Department of Fish and Game and the Canadian Department of Fisheries and Oceans concerning fisheries, stock assessments and joint enhancement activities that took place in both countries in 2005. The panel also received several special reports including: (1) a report concerning the U.S. Stikine subsistence fishery, (2) a report concerning Northern Fund activities, (3) several reports concerning sockeye enhancement activities in the Taku and Stikine Rivers, and, (4) an overview of Canada's Wild Salmon Policy.

Review of 2005 Fisheries and Treaty-Related Performance

PART IV
REVIEW OF 2005 FISHERIES AND TREATY-RELATED PERFORMANCE

The following review has been drawn from a number of reports prepared by Commission staff, joint technical committees, and domestic agencies for presentation to the Commission. Source documents are referenced for each part of this review. All figures are preliminary and will be updated in future reports as more complete tabulations become available.

A. FRASER RIVER SOCKEYE SALMON

In 2005, the Fraser River Panel managed fisheries in the Panel Area that targeted Fraser River sockeye and pink salmon, under the terms of Annex IV of the Pacific Salmon Treaty as revised through December 4, 2002. Chapter 4 of the Agreement specified that the 2005 United States sockeye catch in Panel Areas (Washington) was not to exceed 16.5% and 25.7% of the Total Allowable Catches (TAC) of Fraser River sockeye and pink salmon, respectively. Panel Area fisheries in Canada were to be managed by the Fraser River Panel, while Canadian fisheries outside the Panel Area were to be managed by Canada in a manner that considered catches in United States fisheries.

On February 17, 2005, the Panel agreed on a revised Annex IV, Chapter 4 of the Pacific Salmon Treaty. The revised Annex established new methods for making management decisions, and for calculating the TAC and paybacks from 2005 onward.

Prior to the fishing season, the Panel recommended to the Pacific Salmon Commission a fishery regime and a management plan for Panel Area fisheries. The plan, which set out the terms for available harvest of Fraser River sockeye and pink salmon, was predicated on forecasts of abundance and timing, and escapement targets for Fraser River sockeye and pink salmon provided by Fisheries and Oceans Canada. The plan was also based on international allocation goals set in the Agreement, domestic allocation goals set by each country, management concerns for other stocks and species identified by each country, historic migration patterns, and fisheries dynamics.

The Fraser River Panel managed commercial net fisheries and the Canadian "inside" troll fishery in the Panel Area under the terms of the Agreement. The United States catch in Panel Areas (Washington) was not to exceed 16.5% and 25.7% of the Total Allowable Catches (TAC) of Fraser River sockeye and pink salmon, respectively. There were no paybacks to carry forward for either species from 2004.

Canada presented the Panel with preliminary Fraser River sockeye and pink salmon pre-season run-size forecasts at the Fraser Panel meeting held on February 14-18, 2005. Based on input from PSC staff and additional review, revised estimates were provided to the Panel on April 21, 2005. The forecasts were provided at five probability levels: 25%, 50%, 75%, 80% and 90% probabilities that the run size would be exceeded. Canada identified conservation concerns for Early Stuart, Early Summer, and Late-run sockeye run-timing-groups. Summer-run sockeye were expected to provide the largest share of the catch. Late-run sockeye conservation concerns assumed that the early upstream migration and associated high mortality that has occurred every year since 1996 would continue to occur in 2005.

The Panel used the Fishery Simulation Model to examine potential management options for Fraser River sockeye and pink salmon at the 50% probability level forecasts, which were

12,548,000, and 16,318,000 fish, respectively. For the 2005 management season, DFO recommended the use of guidelines derived from the Spawning Escapement Initiative to set spawning escapement targets for Fraser sockeye run-timing-groups. At the 50% probability level forecast the spawning escapement targets were: 194,000 Early Stuart fish; 362,000 Early Summer-run fish; 5,262,000 Summer-run fish; and 210,000 true Late-run fish (assuming a proposed 15% exploitation rate target for Late-run stocks was agreed upon). The spawning escapement goal for Fraser River pink salmon was 6,000,000 fish. The projected TACs available for international sharing at the 50% probability forecast level were 4,885,000 sockeye and 10,308,000 pink salmon, respectively

Domestic allocation targets for Fraser sockeye in Washington were as follows: Treaty Indian fishers were allocated 67.7% of the United States share, while Non-Indian fishers were allocated the remaining 32.3% of the United States share. The allocation among Non-Indian fishers was 54% for purse seines, 41% for gillnets, and 5% for reefnets. Domestic allocation targets for Fraser River pink salmon in Washington were as follows: Treaty Indian and Non-Indian fishers were each allocated 50% of the United States share.

Domestic allocation targets for Fraser sockeye in Canadian commercial fisheries were as follows: 48% for Area B purse seines, 14.5% for Area D gillnets, 26.5% for Area E gillnets, and 11% for Area H trollers. Area G trollers did not have a Fraser sockeye allocation in 2005. Domestic commercial allocation targets for Fraser River pink salmon were 70% for Area B purse seines, 4% for Area D gillnets, 1% for Area E gillnets, 12% for Area G trollers, and 13% for Area H trollers.

For pre-season planning purposes, a sockeye diversion rate through Johnstone Strait of 80% and average marine timing for all stocks (based on an approved sub-set of years) were assumed (on July 8, DFO provided a forecast of the diversion rate of Fraser sockeye of 78%). DFO forecasts of peak (50% run passage through Area 20) arrival timing, with associated prediction intervals, which are normally provided for the Early Stuart and Chilko stocks, were not available in 2005 due to problems in obtaining the necessary data inputs required to generate the estimates.

Modeling of harvest strategies for Summer-run sockeye, conducted with the Fishery Simulation Model, showed that significant constraints to the harvest of Summer-run TAC existed; the projected catch of Summer-run fish was significantly below the target catch when the 50% probability level forecast of abundance and 80% Johnstone Strait diversion rate were assumed.

On July 15, 2005, the Panel agreed on guidelines to address conservation concerns for "true" Late-run sockeye (Adams, Lower Shuswap, Portage, Weaver, Harrison, Cultus, but not Birkenhead sockeye): For fishery planning purposes, a precautionary approach was used in modeling Late-run sockeye behavior. A median upstream migration date of August 24 was assumed with an associated en route mortality of 81%, as derived from the Management Adjustment model. The Parties agreed to limit the exploitation rate on Late-run Fraser River sockeye to 15%. The Canadian Minister of Fisheries and Oceans announced more stringent harvest constraints in Canadian fisheries for Cultus Lake sockeye; setting a 10 – 12% exploitation rate limit for Cultus sockeye in recognition of serious conservation concerns for the stock.

Because of the low abundance of Late-run sockeye relative to Summer-run sockeye on the 2005 cycle line, only limited research studies were conducted to help determine the cause(s) of early river-entry behavior of Late-run sockeye. Research studies focused on Cultus sockeye timing, the genetics of fish taken for captive brood stock, and intergenerational effects determined from spawning and fertilization experiments.

The Panel's management plan focused on the conservation of Early Stuart, Early Summer-run, and Late-run sockeye stocks and on the harvest of Summer-run sockeye. As a result of these conservation concerns, fishery restrictions were to be imposed early in the season to protect Early Stuart and Early Summer-run sockeye stocks and late in the season to protect true Late-run sockeye stocks.

Between June 29 and September 16, the Fraser River Panel conferred 26 times (by telephone or in-person) to discuss run status and enact in-season orders to regulate Panel Area fisheries. PSC staff provided regular updates on catches, escapements, and racial composition and when appropriate, recommended adoption of in-season run-size estimates and management adjustments. The Panel adopted regulations for Panel Area fisheries consistent with the pre-season planning constraints and in-season updates of relevant data.

The Stock Monitoring program provided in-season estimates of abundance, migration timing, and diversion rate of Fraser River sockeye and pink salmon throughout the fishery management season. A unique aspect of the 2005 Fraser sockeye return was their extremely late marine migration timing. In contrast, Fraser River pink salmon returned earlier than normal. The peak migration timing through to Area 20 was July 16 for Early Stuart sockeye (thirteen days later than average), August 20 for Early Summer-run sockeye (twenty-six days later than average), August 23 for Summer-run sockeye (sixteen days later than average), August 26 for true Late-run sockeye (approximately 10 days later than average), and August 25 for Fraser River pink salmon (six days earlier than average). The extremely late return timing of Fraser sockeye delayed fisheries in both countries. The average diversion rate of Fraser sockeye through Johnstone Strait for the season was estimated to be 70%, while approximately 71% of Fraser pink salmon migrated via Johnstone Strait.

Catches of Fraser River sockeye salmon in all fisheries totaled 1, 763,000 fish. The Canadian catch was 1,144,000 sockeye, United States fishers harvested 501,000 fish, with 207,000 of this total harvested in Panel Area waters by Washington State fishers, and test fishery catches totaled 118,000 sockeye. Canadian catches included 129,000 fish in commercial, 957,000 fish in First Nation's, 50,000 fish in recreational, 7,000 Weaver Creek sockeye in ESSR (excess salmon to spawning requirements) and 1,000 fish in charter fisheries. The small commercial harvest in Canada was a result of the extremely late marine timing of sockeye combined with the additional domestic allocation constraints associated with the Cultus exploitation rate limit of 10 - 12%. Within the United States, fishers in Washington State waters caught 207,000 sockeye and commercial fishers in Alaska caught 294,000 Fraser River sockeye salmon. Commercial fishery catches in both countries summed to 623,000 fish.

Catches of Fraser River pink salmon totaled 1, 042,000 fish: 620,000 in Canadian, 338,000 in United States, and 84,000 in Panel-approved test fisheries. Included in the Canadian total were 125,000 fish in commercial, 448,000 fish in First Nations', and 47,000 fish in recreational fisheries. In the United States fishery, 317,000 pink salmon were harvested in commercial, and 21,000 in recreational fisheries.

The Racial Identification program provided estimates of stock composition for sockeye catches in commercial, Aboriginal, and test fisheries. Scale and DNA data were used in the analyses. Stock composition data were used to estimate the run size and gross escapement of individual stock groups. DNA estimates of stock composition confirmed the presence of Late-run sockeye at critical times during the season. Genetic stock identification (GSI) techniques were used to estimate the contribution of Fraser River pink salmon in commercial and test fisheries.

The post-season estimate of adult return of Early Stuart sockeye (219,000 fish) was 84% of the 50% probability level forecast; Early Summer-run abundance (623,000 fish) was 88%

of the 50% probability level forecast; Summer-run sockeye (5,398,000 fish) were about half of the 50% probability level forecast; and Late-run sockeye (791,000 fish in) were 51% greater than the 50% probability level forecast of abundance. Overall, the return (7,031,000 adults and 53,000 jacks) was about 56% of the 50% probability level forecast for adult sockeye. Among the Summer-run stocks, Quesnel sockeye dominated the returns, followed by Chilko, and Late Stuart /Stellako sockeye. The largest Late-run return was from Harrison sockeye, followed by Birkenhead, Weaver/Cultus and Late Shuswap sockeye. The run size estimate for Fraser River pink salmon is highly uncertain, because DFO did not conduct an escapement enumeration program in 2005 (and most of the run was comprised of escapement rather than catch). The final in-season run-size estimate of Fraser River pink salmon was 10,000,000 fish, which was 61% of the 50% probability level forecast.

Based on final in-season data, the estimated Late-run sockeye exploitation rate was 9% in 2005, which was considerably less than the limit of 15%. The post-season estimate of the Late-run exploitation rate was 10%.

Near-final estimates of spawning escapements to streams in the Fraser River watershed totaled 3,307,000 adult sockeye. Included in this total are 553,000 Quesnel sockeye that were not directly enumerated, but rather projected based on historical data for stocks that were enumerated. The total escapement was 63% of the brood year (1999) escapement of 5,257,000 adults. Spawning escapements for Early Stuart sockeye (99,000 fish) were approximately 60% of the brood year level; Early Summer-run escapements (224,000 fish) were 74% of the brood year level; Summer-run escapements (2,455,000 fish) were 52% of the brood year level; and Late-run escapements (529,000 fish) were more than five times greater than the brood year. The large escapement of Late-run sockeye was due to the largest escapement in the Harrison (389,000 fish) since spawning records began, in 1952. This escapement was 8.5 times larger than the previous largest escapement to this system. The spawning success of female sockeye in the entire watershed averaged 99%, which exceeded the brood year spawning success rate (92%). As noted above, DFO did not conduct an escapement enumeration program on Fraser River pink salmon in 2005, however, with a run size of 10,000,000 fish and an estimated catch of 1,034,000 fish, the implied escapement (by subtraction of catch from total run) is approximately 9,000,000 fish.

In-season estimates of gross escapement (Mission escapement + in-river catches below Mission) were very close to the adjusted gross escapement targets (spawning escapement target + in-river First Nations' and recreational catch requirements) management adjustment) for Early Stuart, and substantially over the target for Early Summer-run (9,000 fish over), Summer-run (1,830,000 fish over), Birkenhead (58,000 fish over) and true Late-run sockeye (207,000 fish over). The summed gross escapements were 8,505,000 fish, 33% more than the target of 6,401,000 fish. The gross escapement for Fraser River pink salmon was approximately 9,434,000 fish or approximately 3,434,000 fish over the target of 6,000,000 fish. The summed gross escapement totals for both sockeye and pink salmon exceeded the adjusted targets due to harvest constraints directed at protecting Late-run sockeye stocks.

Upriver estimates of spawning escapement were below the targets for all runs: Early Stuart (65,000 fish under), Early Summer-run (171,000 fish under), Summer-run (1,551,000 fish under), Birkenhead (57,000 fish under) and true Late-run sockeye (5,000 fish under). In total, spawning ground estimates were 1,849,000 fish or 36% less than the escapement target. The spawning escapement target for pink salmon was exceeded by about 3,000,000 fish.

There are two explanations for why spawning escapements were substantial below targets despite the fact that in-season gross escapements exceeded targets. First, the shortfall in

spawning escapements relative to the in-season targets is at least partly due to the elevated Mission escapement estimates for Early Summer-run, Summer-run and Birkenhead sockeye that were the result of the species composition problem (the proportion of sockeye that is applied to Mission hydroacoustics estimates of Total salmon was overestimated in-season). This component of the explanation can account for about 36% of the total spawning escapement underage. Second the Management adjustments adopted by the Panel in-season were significantly less than the differences between estimates observed post-season. The magnitude of the differences was greatest for Summer-run sockeye where the in-season Management adjustment was 76,000 fish and the post-season difference between estimates was 1,427,000 fish. The large apparent en-route losses of Summer-run sockeye was not expected due to relatively benign migratory conditions. However, it was confirmed by results from an in-river radio tagging program and may have resulted from the extremely late arrival to coastal waters of Summer-run sockeye in 2007. This second component accounts for most of the remaining spawning escapement underage.

Annex IV, Chapter 4 of the Pacific Salmon Treaty was revised on February 17, 2005, and on February 18, 2005 the Commission provided the Panel with guidance based on this revised agreement. The new calculation method, based on final in-season estimates of run size, spawning escapement targets, and management adjustments, resulted in United States underages of 230,000 Fraser sockeye and 687,000 pinks, and Canadian underages of 1,178,000 sockeye and 2,345,000 pinks.

Overall in United States Panel Area waters, both Treaty Indian fishers and Non-Indian fishers did not achieve their allocations. In a proportional sense, Treaty Indian fishers caught a slightly higher fraction than their target and Non-Indian fishers caught a slightly lower fraction than their target. With regard to pink salmon both Treaty Indian fishers and Non-Indian fishers were short of their respective allocations. Proportionately, Treaty Indian fishers caught fractionally more and Non-Indian fishers caught fractionally less than their respective targets.

Similarly in Canadian fisheries, all user groups failed to reach their catch allocations. However with respect to Canadian domestic allocation goals in a proportional sense, Area B purse seines were 6,000 fish under, Area D gillnets were 24,000 fish over, Area E gillnets were 23,000 fish under and Area H trollers were 5,000 fish over their respective allocations of Fraser sockeye. For Fraser River pink salmon, Area B purse seines were 3,000 fish over, Area D gillnets were 4,000 fish over, Area E gillnets were 3,000 fish over, Area G trollers were 15,000 under and Area H trollers were 6,000 fish over their respective allocations of Fraser River pink salmon.

The restrained fisheries in 2005 resulted in moderate by-catches of non-Fraser sockeye and pink salmon and other salmon species in commercial net fisheries regulated by the Fraser River Panel. Catches of non-Fraser sockeye and pink salmon by both countries totaled 70 and 23,000 fish, respectively. Catches of other Fraser and non-Fraser salmon included 79,000 chum, 15,000 chinook, 7,000 coho salmon and 90 steelhead.

As a result of the revised Annex IV, Chapter 4 of February 17, 2005 and the Commission Guidance of February 18, 2005, there were no paybacks carried forward into 2005, and no paybacks generated in 2005 to carry forward to future years for either sockeye or pink salmon.

B. 2005 POST-SEASON REPORT FOR CANADIAN TREATY LIMIT FISHERIES

Fisheries in 2005 were conducted according to Annex IV arrangements under the Pacific Salmon Treaty that was agreed to between Canada and the United States in June, 1999. The conservation-based approach commits the two Parties to abundance-based management for all stocks covered by the Treaty.

Catches reported below provide the best information available to date, and may change when all catch information for 2005 has been received. The catches are based on in-season estimates (hailed statistics), on-the-grounds counts by Fisheries and Oceans Canada management staff and independent observers, logbooks, dockside tallies, and landing slips (aboriginal fisheries), fish slip data (commercial troll and net), and creel surveys, logbooks and observers (sport and commercial).

Annex fisheries are reported in the order of the Chapters of Annex IV. Comments begin with expectations and management objectives, followed by catch results by species, and where available and appropriate, escapements. The expectations, management objectives, catches and escapements are only for those stocks and fisheries covered by the Pacific Salmon Treaty (PST); domestic catch allocations have been excluded. A table attached at the end of this report summarizes 1995-2005 catches in Canadian fisheries that have at some time been under limits imposed by the Pacific Salmon Treaty.

Transboundary Rivers

Stikine River

Canada developed a fishing plan for the Stikine River based on the catch sharing arrangements outlined in Annex IV, Chapter 1, Paragraph 3 of the PST, including the recently negotiated catch sharing arrangement on Transboundary Chinook and coho salmon promulgated on 17 February 2005. Accordingly, the 2005 management plan was designed to meet agreed escapement targets and the following harvest objectives: to harvest 50% of the total allowable catch (TAC) of Stikine River sockeye salmon in existing fisheries; to allow additional harvesting opportunities for enhanced stocks in terminal areas to target sockeye salmon that were surplus to spawning requirements; to harvest 5,000 coho salmon in a directed coho salmon fishery; and, to allow chinook salmon to be taken in a targeted in river commercial fishery. The Canadian percentage of the TAC was based on the total run size whereby the Canadian TAC increases in the years of low total TAC and decreases in years when the total Chinook TAC is high. For example, the Canadian TAC is 90% of the total TAC when the total TAC is ~5k large chinook; whereas, the percentage of the total TAC drops to ~39% when the total TAC is ~ 50k large chinook salmon. The 2005 season opened on 08 May, statistical week SW20, and ended 14 Oct SW43. Commercial gear consisted of one net through 04 June SW23. From week ending 11 June SW24 to the conclusion of the fishery on week ending 14 Oct SW43, fishers were permitted two nets. The original fishing zone, bounded by the International border and the mouth of the Porcupine River, was extended upstream 26 km to the mouth of the Flood River on 05 June SW24.

The upper Stikine commercial fishery was governed by openings and closures announced for the lower Stikine commercial fishery. Fishers were permitted only one net however. There was only minor fishing effort in this fishery.

The First Nations fishery located near the community of Telegraph Creek, B.C. was active from late May to September. There were no time or gear restrictions imposed on this fishery.

The chinook sport fishery is centred at the mouth of the Tahltan River, including the mainstem Tahltan River. Minor sport fishing activity occurs in the Iskut River and other

areas within the Stikine River drainage. Sport fishing activity commenced in late June and peaked in mid July. There were no new time, gear, or area restrictions imposed in 2005.

Sockeye salmon

The pre-season forecast of Stikine sockeye salmon, as provided by the Canada/US Technical Committee for the Transboundary Rivers (TCTR), was for a terminal run size[1] of 477,120 fish, including 398,500 Tahltan Lake origin sockeye salmon (215,200 wild and 183,300 enhanced), 3,500 enhanced Tuya Lake sockeye, and 75,100 non-Tahltan wild sockeye salmon. For comparison, the previous 10-year (1995-2004) average terminal run size was approximately 188,400 fish.

Preliminary combined catches from the Canadian commercial and aboriginal gillnet fisheries in the Stikine River in 2005 was 85,890 sockeye, 76% above the 1995-04 average of 48,900 fish. The lower Stikine commercial fishery harvested 80,000 sockeye, while the upper Stikine commercial and First Nation fishery harvested a total of 600 and 5,300 fish respectively. In addition to these catches, 1,651 sockeye salmon were taken in a test fishery located near the international border and <100 sockeye were taken in a terminal fishery located at the mouth of the Tuya River. The preliminary estimate of the total contribution of sockeye salmon from the Canada/U.S. fry-planting program to the combined Canadian aboriginal and commercial fisheries is 31,700 fish, 37% of the catch.

A total of 43,446 sockeye salmon were counted through the Tahltan Lake weir in 2005; 52% above the 1995-2004 average of 28,664 fish. The 2005 count was the ninth highest count on record (1959-2005) and was approximately 45% above the upper end of the escapement goal range of 18,000 to 30,000 fish. An estimated 16,100 fish (37%) originated from the fry-planting program, which is close to the 44.0% contribution of smolts observed in 2002, the principal cycle year contributing to the 2005 return. A total of 400 sockeye salmon was sacrificed at the weir for stock composition analysis. In addition, a total of 3,424 sockeye salmon was collected for broodstock, resulting in a spawning escapement of 39,641 sockeye salmon in Tahltan Lake.

The spawning escapements for the non-Tahltan and the Tuya stock groups are calculated using stock ID, test fishery and in-river catch data. The preliminary escapement estimates are 30,500 non-Tahltan and 300 Tuya sockeye salmon. The existence of enhanced Tuya escapement continues to be a serious concern because of straying[2] and potential associated impacts to wild spawning stocks. (A study on the behavior of Tuya strays was conducted in August and September, 2004 and April and May 2005. A report on the program findings is due in January, 2006.) The non-Tahltan spawning escapement estimate is 8% below the recent 10 year average and close to the mid-point of the escapement goal range of 20,000 to 40,000 fish. Aerial survey counts of non-Tahltan sockeye also indicated a below average return. The index count of only 558 fish was 42% below the 1995-04 average of 972 fish.

Based on the in-river run reconstruction of the Tahltan Lake run expanded by run timing and stock ID data in the lower river and estimated harvests of Stikine sockeye in US terminal gillnet fisheries, the preliminary post-season estimate of the terminal sockeye run size is approximately 262,457 fish. This estimate includes 189,858 Tahltan Lake sockeye, 1402 Tuya Lake sockeye, and 71,196 sockeye of the non-Tahltan stock aggregate. A Stikine run size of this magnitude is 43.1% above the 1995-2004 average terminal run size of 183,300 sockeye salmon. The preliminary post-season estimate of the Canadian TAC for 2005 is

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[1] Terminal run excludes allowances for U.S. interceptions that occur outside of the District 108 and 106 gillnet fisheries.

[2] Straying of Tuya sockeye has been confirmed using radio telemetry and sampling for thermal marks.

approximately 104,140 sockeye, well above the actual catch of 85,890 sockeye.

In-season management was influenced significantly by run size projections derived from the Stikine Management Model (SMM), which was updated and refined by the TCTR prior to the season. The model is based on the historical relationship between cumulative catch per unit effort (CPUE) and run size and provides three sets[1] of independently generated projections: one set based on US District 106 CPUE; another based on Canadian in-river commercial CPUE; and the third, based on Canadian test fishery CPUE. Since the model predictions derived from the test fishery data in 2000-2003 were the closest to respective post season estimates of run size, the TCTR gave priority to the run projections derived from test fishery data for management purposes in 2005. The TCTR, however, was compelled to use commercial fishery catch data for SMM projections commencing in week 28 due to extremely high sockeye returns which resulted in extended commercial fishing periods. (The commercial fishery was opened for 24 consecutive days in July; as per the operational plan, the test fishery did not fish during this extended commercial fishery.)

The in-season projections ranged from 191,900 fish in SW28 (03-09 July) to 274,600 fish in SW34 (14-20 August). The final SMM projection indicated a terminal run size of approximately 273,724 sockeye and a TAC for Canada of approximately 108,600 sockeye. According to this projection, the Canadian catch was below the treaty entitlement.

The sockeye mark-recapture programme initiated in 2000 continued in 2005. The primary objectives of this programme are to provide an estimate of abundance independent from the SMM and to examine the feasibility of developing an alternate abundance-based management tool for Stikine sockeye if required. The preliminary mark-recapture estimate of the total in-river run size is approximately 167,000 sockeye salmon. This estimate is only 3% above the in-river run estimate of 162,000 sockeye based on the traditional method of reconstructing the in-river Tahltan run then expanding it using stock ID and run timing data. Further analyses are required to: a) determine which estimate should be used as the final post season estimate; and b) to compare the performance of the mark-recapture projections vs. those of the SMM and chose one or both for the principal management in season management tool. To obtain information about relative distribution, migratory behaviour and stock-specific timing, a joint Canada US sockeye radio telemetry project was undertaken for the second consecutive year in 2005; analyses are still in progress.

Coho salmon

Poor prices in concert with the relatively low coho salmon quota of 4,000 fish resulted in a catch of only 276 coho, 62% below the 1995-2004 average of 720 coho salmon. All of the coho were caught in the course of the sockeye fishery.

The cumulative weekly CPUE of 6.67 observed in the coho test fishery was 81% above the recent 10 year average of 3.68 cumulative CPUE. Aerial surveys of two principal index sites did not follow suit with a combined count approximately 33% below the recent 10 year average.

Chinook salmon

The pre-season forecast of Stikine chinook salmon, as provided by the Canada/US Technical Committee for the Transboundary Rivers (TCTR), was for a terminal run size of 80,300 large chinook salmon. (Jack chinook, fork length <735mm were excluded in both run size projections and management considerations). For comparison, the previous 10-year (1995-

[1] Each set of projections includes predictions of the terminal run size of all Stikine sockeye, the Tahltan stock, the Tuya stock and the mainstem stock conglomerate.

2004) average terminal run size was approximately 42,600 large chinook.

The total combined gillnet catch of chinook salmon in the aboriginal and commercial fisheries included 18,997 large chinook and 2,177 jacks compared to 1995-2004 averages of 2,492 large chinook and 819 jacks. The 2005 sport fishery harvested an estimated 120 large chinook, below the recent 10 yr average of 200 fish. Obviously the 2005 catch eclipses the recent 10 yr average due to the new in river chinook commercial fishery. Past year's catches, save for the First Nation catch, were incidentally caught chinook taken during the prosecution of the sockeye fishery.

In-season management was influenced significantly by run size projections derived from the Stikine Chinook Management Model (SCMM) and a mark-recapture program. The model is based on the historical relationship between cumulative catch per unit effort (CPUE) observed at the tagging site and run size in 1996 through to 2004. Commencing on SW 23, 29 May to 03 June, mark-recapture estimates were derived weekly and based on the cumulative ratio of tagged to untagged fish observed in the commercial fishery. In order to honour Annex IV, Chapter1, Paragraph 3(a)(vii) which identifies the will of both parties to apportion their overall TAC by historical weekly run timing, weekly fishery openings were announced based on run timing calculation derived from run timing information collected at the Kakwan tagging site, located 24 km downstream from the Canadian commercial fishery. Run timing information was also garnered from the historical CPUE observed in US District 108.

The in-season projections ranged from 57,400 fish in SW21 (15-21 May) to 84,500 fish in SW23 (29 May to 04 June). The final SCMM projection indicated a terminal run size of approximately 78,000 sockeye, while the preliminary m-r estimate indicated a total run of 82,200 large chinook. Accordingly the TAC for Canada ranged from approximately 21,800 to 23,200 large chinook salmon. Weekly catch quotas were calculated based on the historical run timing and the total TAC was based on the average proportion of fish entering the fishery in the current week. There was only mixed success in reaching weekly targets. Generally Canada was well behind weekly target up to and including SW23, week ending 04 June. In response, Canada increased gear to two nets and advanced the fishing zone upstream approximately 25 km. The fleet's efficiency subsequently improved. Canada weekly catches were, in general, close to or slightly above quota for the balance of the chinook fishery which terminated at the end of SW26, week ending 26 June. Management emphasis switched to sockeye salmon after this date. The preliminary final Canadian catch of 18,997 large chinook salmon was below the treaty entitlement of 21,800 to 23,200 large chinook. (Note that a formal mark recapture estimate is required before an accurate account of fishery performance can be made. The analyses of the tagging study are in progress.)

To obtain information about relative distribution, migratory behaviour and stock-specific timing, a joint Canada US chinook radio telemetry project was undertaken for in 2005. This study will complement a similar telemetry study conducted in 1997. Analysis of the 2005 is in progress. In addition to the mark-recapture, radio tagging, and aerial surveys, genetic samples were collected on a weekly basis from chinook caught in the US District 108 fishery. These data will be used to assess stock specific run timing in District 108 based on the available base-line genetic profiles of discreet Stikine River chinook stocks.

The count of 7,387 large chinook salmon through the Little Tahltan River weir, the principal Stikine River chinook stock, was slightly above the 1995-2004 average of 6,976 large chinook. The count was 38% above the upper end of the escapement goal range of 2,700 to 5,300 chinook salmon and 85% above the targeted mid point escapement goal of 4,000 large chinook. The weir count of 231 jack chinook salmon was close to the previous 10-year average of 250 fish. The preliminary total escapement estimate within the Canadian portion of the Stikine River based on a mark-recapture estimate is 29,868 large chinook. This

escapement is slightly above the upper range of the escapement goal of 14,000-28,000 fish and 43% above the targeted mid range escapement goal of 14,000 large chinook.

Joint sockeye enhancement

Joint Canada/U.S. enhancement activities continued with approximately 4.5 million sockeye eggs collected at Tahltan Lake in the fall of 2005. The egg take operations began approximately one week later than normal. This was by design and based on the observation that a relatively small portion of the eggs are taken during the first week of September. Due to difficulties in collecting brood stock it became apparent by mid September that the 6.0 million egg take goal was probably not going to be met. Consequently the egg take crew was contracted to continue with egg take operations to the 29 September, beyond the 25 September end date as defined in the contract. Even with this extension, the goal of 6.0 million eggs was not met. The termination date was established to allow time for undisturbed spawning of wild stocks.

Approximately 1.23 million fry were out-planted into Tahltan Lake in early to late May 2005. The fry originated from the 2004 egg-take at Tahltan Lake and were mass-marked in the hatchery with thermally induced otolith marks. For the second time in four consecutive years, sockeye fry originating from the Tahltan Lake egg take were released into Tuya Lake. A total of 3.2 million fry were released in mid June.

Approximately 1.84 million sockeye salmon smolts were enumerated emigrating from Tahltan Lake in 2005, 48% above the 1995-2004 average smolt count of approximately 1.24 million smolts. The contribution of hatchery origin fish was approximately 0.88 million smolts and represented 48% of the emigration.

To address problems associated with fish capture in the lower Tuya River, the plans developed in 2003-04 to install a siphon fed floating fishway/trapping apparatus were implemented. The fishway, which including a fish trap, was designed to increase the terminal harvest capability for enhanced Tuya sockeye salmon while still allowing indigenous species to bypass the capture site. The fishway was operational from 28 July 28 August. The experiment indicated that changes were required in the design of the steep pass fish ladder, specifically, the reconfiguration of the internal baffles so as to enable the ladder to contain a higher volume of flow and a reduced velocity. The experiment also indicated that more siphon flow is required and that a lead fence to the trap entrance is desirable.

For the second consecutive year, PSC Northern Fund funding was provided in 2005 to address harvest and fish straying issues in the Tuya River. A steering committee, consisting of Canadian and US engineers and others, was established to examine potential fishing sites and investigate the purchase, installation, and maintenance of a fish capture system upstream from the mouth of the Tuya River. Funds from the 2005 project were spent on the construction, delivery, installation operation, and demobilization of the fish trap. Funding to implement the recommended changes as provided by the Tuya Steering committee was applied for through the Northern Fund. Word on the success of the application is due in February 2006. The Tuya straying study was completed in May 2005. The report of the study results and recommendations is currently in progress, as is a literature review on the effects of salmon straying. The reports are in draft form and are presently being reviewed by DFO and ADF&G personnel.

Taku River

As with the Stikine River, the fishing plan developed by Canada for the Taku River was based on the arrangements in Annex IV, Chapter 1, Paragraph 3 of the Pacific Salmon Treaty, including the amendment to Paragraph 3(b) regarding chinook salmon. Accordingly,

the plan addressed conservation requirements and contained the following harvest objectives: to harvest 5,000 to 37,000 chinook salmon depending on terminal run projections; to harvest 18% of the TAC of wild Taku River sockeye salmon plus up to 20% of the projected sockeye escapement in excess of 100,000 fish; to attain a 50% share of the catch of enhanced Taku River sockeye; and, to harvest 3,000 to 10,000 coho salmon, depending on in-river run size projections, in a directed coho fishery. The 2005 season opened on 1 May, SW19, and ended in SW41 (week ending October 08).

Sockeye salmon

The Canadian pre-season run outlook was for a total sockeye run of 272,000 sockeye, approximately 4% above the previous 10-year average total run size of 261,000 sockeye.

The 2005 Canadian sockeye catch totaled 21,932 sockeye, 21,829 of which were caught in the commercial fishery and the remainder in the aboriginal fishery. The commercial catch was below the 1995-2004 average of 30,000 sockeye. Enhanced sockeye returns were expected to be low; the preliminary estimate of the contribution of sockeye salmon from the Canada/U.S. enhancement program to Canadian fisheries is only 197 fish. The estimated total spawning escapement of 106,186 sockeye salmon in the Canadian section of the Taku River is above the mid-point of the interim escapement goal range of 71,000 to 80,000 fish and equal to the 1995-2004 average of 106,000 sockeye. Based on weir counts, escapements to the Little Trapper, Tatsamenie and Kuthai lake systems were 15,898, 3,372 and 6,004 sockeye, respectively. The Little Trapper escapement estimate was 28% above the 1995-2004 average, whereas, the Tatsamenie count was 43% below average. The Kuthai Lake count was 25% above the 1995-2004 average. The enumeration project at King Salmon Lake was operated for the full migration period for the second year in a row; 1,046 sockeye were counted, 79% below the number counted in 2004.

Projections of the total sockeye run size, TAC, and total escapement were made frequently throughout the fishing season. The estimates were based on the joint Canada/U.S. mark-recapture program, the estimated interception of Taku River sockeye in U.S. fisheries, the catch in the Canadian in-river fishery, and historical run timing information. The preliminary post- season estimate of total run size is approximately 188,165 wild sockeye with a TAC of 108,165 to 118,165 sockeye. Escapement is estimated at 106,186 sockeye. Preliminary analysis indicates that the Canadian sockeye catch represented 18.6-20.3% of the TAC. The preliminary estimate of the total run of enhanced Taku sockeye salmon is approximately 1,446 fish of which Canada harvested 14%.

Coho salmon

The catch of 6,860 coho salmon was 35% above the 1995-2004 average catch of 6,143 coho salmon. Of the commercial coho catch, 3,512 fish were taken in the directed coho fishery, i.e. after SW33. A total of 179 coho were taken in the aboriginal fishery. A test fishery, which started in SW36, harvested 3,169 coho. Preliminary mark-recapture data indicated a spawning escapement of 94,500 coho salmon in 2005. This estimate is close to the previous 10-year average of 99,149 fish, and approximately three times the mid-point of the interim escapement goal (27,500 – 35,000 fish). The preliminary estimate of the total in-river run into the Canadian section of the drainage was 102,772 coho. The spawning escapement and in-river run estimates may be expanded slightly if it is determined that the mark-recapture study did not cover the entire run. According to the PST harvest arrangements for Taku coho salmon, Canadian fishers were entitled to harvest up to 10,000 coho salmon at a run size of this magnitude.

Chinook salmon

The bilateral pre-season run outlook was for a terminal run of 99,610 chinook, approximately 82% above the previous 10-year average total run size of 54,733 fish.

The 2005 Canadian chinook catch of chinook was 7,534 fish, almost all of which were caught in the commercial fishery. The aboriginal fishery harvested 160 fish. Additional chinook were likely caught in the recreational fishery; the number is unknown but presumed to be less than 300 fish. The commercial catch was above the 1995-2005 average of 2,554 incidentally harvested chinook. The harvest of jack chinook was 821 fish, approximately 3.5 times the average.

Chinook escapement counts were average to well below average in the six Taku River aerial index areas surveyed. The combined six-stream index count of 4,196 fish was 52% below the previous 10-year average of 8,817 chinook. Preliminary estimates derived from the joint Canada/US chinook mark-recapture program indicate a total spawning escapement of approximately 39,237 large chinook salmon, below the target of 42,500 fish for 2005 (the mid-point of the escapement goal range of 30,000 to 55,000 fish). This spawning escapement estimate is also below the 1995-2004 average of 50,909 chinook.

In-season projections of the terminal chinook run size, AC, and escapement were made starting in SW22. The estimates were based on the joint Canada/U.S. mark-recapture program, the estimated interception of Taku River chinook in U.S. fisheries, the catch in the Canadian in-river fishery, and historical run timing information. The final in-season estimate of terminal run size is approximately 66,309 chinook with an AC of 18,046 fish plus base level catches (BLC) of 4,000 fish (3,500 U.S. and 1,500 Canada). The total Canadian allowable catch (AC plus BLC) was 9,967 chinook, of which 75.6% was taken. Postseason analysis of the mark-recapture results, including spawning ground tag recovery efforts, is in progress.

Joint sockeye enhancement

Joint Canada/US enhancement activities at Tatsamenie Lake continued in 2005 and an estimated 1,877,000 viable eggs were delivered to the Snettisham Hatchery in Alaska for incubation and thermal marking. As in recent years, egg collection was below the target of 5.0 million eggs due to below-average escapement to Tatsamenie Lake. For the same reason, the experimental passive flow incubators within Tatsamenie Lake were not stocked in 2005. The in-lake incubation project, which was initiated on a small scale in 1998, is part of ongoing investigations into techniques that may increase fry-to-smolt survivals of the outplanted enhanced fry which have been well below expectations.

In late May 2005, approximately 628,000 fry were transported from Snettisham Hatchery to Tatsamenie Lake. The green egg-to-fry survival was approximately 84%; IHNV was not a problem this year. Approximately one half of the fry were released immediately; the other half was held three days and then released unfed.

The 2005 Tatsamenie Lake sockeye smolt out-migration was estimated to be approximately 675,400 fish. The enhanced contribution, based on preliminary thermal mark analysis, was estimated to be 36%.

Alsek River

Although catch sharing of Alsek salmon stocks between Canada and the U.S. has not been specified, Annex IV of the PST does call for a co-operative development of abundance-

based management regimes for Alsek chinook, sockeye and coho stocks. Instead of managing to system-wide goals, which for the most part have been as yet unverifiable, the TCTR has established index goals for the Klukshu River stocks. Historically, the principal escapement-monitoring tool for chinook, sockeye and coho salmon stocks in the Alsek drainage has been the Klukshu River weir, operated by Fisheries and Oceans Canada and the Champagne-Aishihik First Nation. The Klukshu River is a tributary to the Tatshenshini River, which is the major salmon producing river system of the Alsek drainage.

Based on joint stock-recruitment analyses conducted on Klukshu chinook and sockeye salmon, Canadian and U.S. managers agreed to a minimum escapement goal of 1,100 Klukshu chinook salmon and an escapement goal range of 7,500 to 15,000 for Klukshu sockeye salmon for the 2005 season. An escapement goal for Klukshu coho salmon has not yet been developed.

Highlights of the 2005 season included below average returns of both chinook and sockeye salmon. A total of 107 chinook salmon was harvested in the aboriginal fishery, which was 49% below the 10-year average (1995-2004) of 220 fish. The aboriginal fishery harvested an estimated 337 sockeye salmon, 75% lower than the 10-year average (1995-2004) of 1,326 fish. Fourteen coho salmon were harvested in the aboriginal fishery.

Despite an increase in the daily chinook catch limit from one to two on June 30th, recreational fishers harvested only 35 chinook, which is 87% below the 10-year average. The sockeye catch was below average and amounted to 20 retained and 18 live-released. Due to the low returns of late-run sockeye, the sockeye fishery was closed on September 09th. A total of 54 coho salmon was kept and an additional 37 were released. Recreational catches have been adversely affected in recent years by significant changes in river channelisation.

The Klukshu weir count of 1,070 chinook salmon was 42% of the previous 10-year (1995-2004) average of 2,552 fish. The estimated spawning escapement of 963 chinook salmon above the weir did not meet the minimum escapement goal of 1,100 Klukshu chinook salmon.

The weir count and spawning escapement of Klukshu River sockeye salmon was 3,373 and 3,036 fish, respectively. The early-run count of 952 sockeye was 31% of the previous 10-year (1995-2004) average of 3,092 fish; however, the record low late-run count of 2,421 fish was 20% of the previous 10-year average of 11,983 sockeye salmon. The overall spawning escapement of 3,036 sockeye salmon in the Klukshu River was below the lower end of the escapement goal range (7,500 – 15,000). A below average sockeye escapement was recorded in the neighbouring tributary of Village Creek where an electronic counter recorded an estimated 1,398 sockeye, 54% of the 10-year average.

The Klukshu weir count of 683 coho salmon was 21% of the previous 10-year average of 3,182 fish. The weir is removed prior to the completion of the coho return due to icing conditions and generally does not include fish that migrate after mid-October. In 2005, the weir was pulled on October 20th.

Northern British Columbia Pink Salmon

Areas 3-1 to 3-4 Pink Net Catch

For the year 2005, Canada was to manage the 3-1 to 3-4 net fishery to achieve an annual catch share of 2.49 percent of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 pink salmon.

In the Canadian northern boundary area, pink salmon returns were anticipated to be above average for both Area 3 and Area 4. Returns to Area 3 were above average. The early component of the Area 4 pinks run returned as expected while the latter part of the run was weaker than anticipated. A strong return was expected for the SE Alaska pink stocks adjacent to the northern boundary area. The Canadian pink catch in 2005 in Sub-areas 3-1 to 3-4 was 878,552 and a preliminary estimate of the Alaska stock component of this catch is estimated to be 736,938, or 2.21 % of the AAH, and is below the allotted 2.49 % of the AAH.

The total Canadian pink catch of 878,552 in sub-areas 3-1 to 3-4 is nearly half the 1985-2000 average catch of 1.46 million. The below average harvest resulted from management restraints on Canadian net fisheries in Sub areas 3-1 to 3-4 to reduce the harvest of less abundant upper Skeena coho and the poor Skeena sockeye return. The percentage of the 2005 Area 3 net catch taken in sub-areas (1-4) was 40.9%, which was well below the 1985-2000 average of 58%.

Pink escapements in 2005 were at above target in Area 3 and at target for the Skeena.

Area 1 Pink Troll Catch

Area 1 Pink Troll Catch

For the year 2005, Canada was to manage the Area 1 troll fishery to achieve an annual catch share of 2.57 percent of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 pink salmon.

The Canadian commercial troll fishery in Area 1 was open in the northern portion of the area from June 15 to September 30. The fishery harvested a total of 39,430 pink salmon, with an estimated of 34,758, or 88%, being of Alaskan Districts 101, 102 and 103 origin. With an allowable troll harvest of 852,136 Alaskan Districts 101, 102 and 103 pinks, the actual harvest equals 0.1% of the allowable harvest, well below the annex agreement for 2.57 percent of the AAH of Alaskan Districts 101, 102 and 103 pink salmon.

Chinook Salmon

AABM Fisheries

North Coast B.C. (NBC) troll and Queen Charlotte Islands (QCI) sport fisheries:

The pre-season abundance index for North Coast B.C. troll and Q.C.I. Sport fisheries in 2005 was 1.69, which allowed a total catch of 246,600 chinook in these fisheries. Preliminary estimates indicate a total catch of 243,606 chinook. 174,806 caught in commercial troll fisheries and 68,800 caught in sport fisheries.

The North Coast B.C. troll fishery was opened for chinook fishing from October 1, 2004 to March 30, 2005 and from June 3 to September 30, 2005. The major portion of this latter fishery consisted of a demonstration fishery to examine the application of individual transferable quotas in the troll fishery. A total of 174,806 chinook were caught with 161,321 chinook caught under the quota system. The size limit was 67 cm. Barbless hooks and revival boxes were mandatory in the troll fishery. A test fishery was conducted in areas off the west coast of the Queen Charlotte Islands. 1489 legal sized chinook were caught. This catch is included in the total for the troll fishery.

Sport fishing was open with a daily limit of 2 chinook and a possession limit of 4 chinook. An estimated 68,800 chinook were caught in the Queen Charlotte Islands sport fishery. A

minimum size limit of 45 cm was in effect and barbless hooks were mandatory in the sport fishery.

Chinook ISBM Fisheries

Fisheries included in this category are commercial net fisheries throughout north and central BC, marine sport fisheries along the mainland coast and freshwater sport, and Native fisheries in both marine and freshwater areas. Under the PST, obligations in these fisheries are for a general harvest rate reduction (estimated in aggregate across fisheries) for ocean mixed-stock fisheries and for stock-specific objectives (i.e., achieving the escapement goal) in terminal areas.

North Coast commercial gillnet catches totalled 5,683 chinook from Areas 3 to 6 (from fish slip catch data). Chinook catch in Areas 3 and 4 were 3713 and 1830 chinook respectively. 140 chinook were reported caught with gillnets from Area 6. No chinook were reported caught in Area 5. The Skeena River test fishery index for chinook salmon was slightly higher than 2004. A total of 1,136 large chinook and 196 jacks were caught in the test fishery.

Johnstone Strait commercial fisheries including Area B seine and Area D gillnet are managed by South Coast and corresponding catches are reported in the South Coast section of this report.

Tidal sport catches from lodges operating in the Rivers Inlet, Hakai Pass and Bella Bella areas totalled just over 8,600 chinook showing an increasing trend over the past few years. Detailed surveys of private anglers are not conducted throughout this area but private catches are generally less than the lodge component. A creel survey was used to estimate non-lodge catch of chinook in Rivers Inlet. The resulting chinook catch estimate for 2005 was 360.

Tidal sport catches near the mainland coast of Northern BC were not estimated for 2005. Catch in Areas 3 & 4 by the 2005 sport fishery are probably near the 2002 estimate of 8,000 chinook. No freshwater creel surveys were conducted in the North Coast in 2005. The sport catch from the Skeena River fishery (downstream of Terrace, B.C.) included 6280 chinook in 2003. Effort continues to increase in tidal and freshwater sport fisheries but chinook abundance was less in 2005 than the previous 3 years. Effort levels in the lower Skeena River in 2003 were double those measured by the last survey in 1995.

Catches by First Nations in the North Coast exceeded 17,500 chinook. Nisga'a catches from the Nass River were 6662 chinook. Haida catches on the Queen Charlotte Islands were estimated at 2450 chinook. Only a portion of catches from Native fisheries in the Skeena have been reported but current estimates exceed 8400 chinook. Preliminary estimates of chinook catch by First Nations on the Skeena appear to be less than 2004.

Catches by First Nations in the tidal portion of the Central Coast were reported as 233 chinook while the non-tidal catch of terminal Atnarko River Chinook was 3,884 fish.

Overview of Northern BC Chinook Stock Status

Since an assessment of the ISBM fisheries will be relative to the escapements achieved in the chinook indicator stocks, a brief overview of the 2005 returns is provided. Northern BC terminal runs were the lowest since 1995 and corresponding lower chinook escapements were observed in most watersheds. Preliminary estimates of Nass River escapements declined to 14,219. Skeena River chinook escapements were estimated at approximately

30,000. Yakoun River was the only indicator stock that remained stable with an estimated escapement of 5000 chinook. Kitimat River chinook escapements were not estimated in 2005.

Overview of Central Coast Chinook Stock Status

Currently only 2 systems are monitored in Areas 12 and 13 with some level of consistency. The Nimpkish River is monitored using standardized swim surveys and stream walks by the hatchery staff. The Quinsam hatchery staff conducts an intensive mark-recapture program to estimate escapement on the Quinsam/Campbell system. Other systems are covered using intermittent visual surveys.

Nimpkish River

As a result of the high water conditions, only a few visual observations were conducted to determine chinook abundance in the Nimpkish River. Although coverage of the Nimpkish system in 2005 has been poor, the observations made would indicate similar return levels as recent years. While the chinook returns appear to have stabilized, abundance levels are still extremely depressed in comparison to the historic dataset. The poor weather conditions impeded brood stock capture leading to well below target levels currently in the hatchery.

Quinsam/Campbell

Preliminary escapement estimates indicate that the total return for both adults and jacks in both Campbell and Quinsam Rivers will be slightly less than 2004, but still better than average. Escapement levels over the past couple of years seem to be holding at a steady level. The brood stock goal of 1558 adults (779 males + 779 females) was attained.

Fraser River Sockeye and Pink Salmon

Fraser River Sockeye Salmon

The sockeye run-size forecast for 2005 resulted in a preseason plan based on the 50% probability level of abundance (12.5 million) with a predicted diversion through Johnstone Strait of 80%. The pre-season plan also incorporated provisions to protect Early Stuart, Early Summer and Late Run stocks in addition to Cultus and Sakinaw Lake sockeye. The U.S. share of the annual Fraser River sockeye salmon total allowable catch (TAC), harvested in the waters of Washington State was set at 16.5% as per the PST Annex IV Chapter IV agreement. There were no catch overages of Fraser River sockeye from previous years to address. The panel adopted 50% probability level forecasts for Early Stuart, Early Summer, Summer and Late-run sockeye for planning fisheries. The 2005 50% probability forecasts for the four management aggregates are as follows: Early Stuart 258,000; Early Summer 718,000; mid-Summer Run 11.0 million; and Late Run 524,000 (of which 277,000 were Birkenhead type).

The forecast for Early Stuart was considerably lower than average (893,000 for the 2005 cycle) primarily due to the continued decline in spawners in the Driftwood system and below average fry survival. As well, the brood year return of 171,000 was the lowest in the past five cycle years. The Early Summer forecast was more than double the historical average (316,000), as a large component of the brood year was protected from harvest pressure due to a management window in the brood year 2001. However, spawning escapements for the later timed stocks (e.g., Fennell, Scotch, and Seymour) have declined in recent years likely due to increasing pressure to begin Summer-targeted fisheries earlier to avoid Late Run sockeye. The Summer run forecast was close to historical average for this

cycle (11,900,000). All Late-run stocks were forecast to be below cycle line average. Continued decline in spawner abundances for the Weaver, Portage, and Cultus stocks in this run timing group are of concern. The Panel identified the achievement of Late-run objectives as a priority in 2005.

Late Run sockeye have historically delayed in the Gulf of Georgia for 4-8 weeks prior to entering the Fraser River. Beginning in 1996, this behaviour has changed to one where there has been shorter delay and occasionally immediate river entry. This unusual behaviour has been associated with high levels of en-route and pre-spawn mortality, reaching levels of 90% and greater in 2000 and 2001, though dropping substantially in recent years (2002 (<20%) and 2003 (23%)). However, in 2004, the estimates for pre-spawn and en-route mortality were 2% and 66%, respectively. To address the high probability of continuing en route and pre-spawning mortality in 2005, the Fraser River Panel adopted a precautionary management strategy. Conservation objectives for Late-run sockeye and Cultus/Sakinaw sockeye were instrumental in pre-season planning for 2005. The Minister of Fisheries and Oceans decision to limit the exploitation rate on Cultus and Sakinaw sockeye stocks to 10 to 12% had significant impacts on Canadian fisheries. The Panel agreed that fishery impacts on Late-run sockeye in 2005 would be limited to 15% of the total return, and the United States limit would be calculated as for all other run timing groups (i.e., 16.5% of the 15% allowable exploitation rate after deductions).

The pre-season plan made several assumptions, including:

- Late Run sockeye would continue their early migration behaviour with an associated en route mortality rate of 81% based on a 50% peak river entry date of August 24;
- that a 6 day separation exists in the 50% marine migration timing between Summer-run and Late-run sockeye (i.e., the historical average timing difference for the 2004 & 2005 cycle lines back to 1976);
- that although the capability to assess in-season run size and migration timing would be good for Summer Run sockeye it was unlikely that run-size updates and timing would be possible during the period of active Panel management for Late Run sockeye due to low abundance relative to Summer-run sockeye; and
- that as a result of in-season limitation with respect to monitoring run strength and migration timing of Late-run stocks in 2005, the approach to management of these fisheries would be based on pre-season guidelines to address Late run concerns. Late run exploitation rate would be tracked using DNA stock identification techniques. The pre-season plan limited overall Late run exploitation rate to 15%. Additionally, Canada would be managing the Cultus/Sakinaw exploitation rate in specific to between 10-12% and, for management purposes, the Weaver migration profile would be used as a DNA stock ID proxy for the Cultus exploitation rate.

In past years, the Fraser River sockeye spawning targets were based upon a Rebuilding Strategy. Due to some shortcomings in this approach, the department adopted a new escapement strategy for Fraser River sockeye in 2005. The process of developing this new approach is known as the Fraser River Sockeye Spawning Initiative. The full report and details of the approach can be found at:

http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/consultations/salmon/sapdefault_e.htm

The Canadian fishing plan also addressed conservation specific-concerns for:

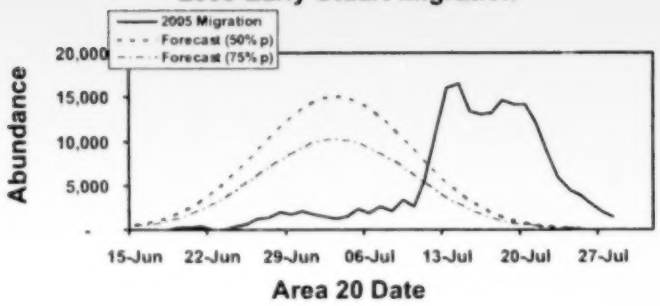
- Upper Fraser River/Thompson River coho
- Nimpkish River, Rivers Inlet & Smith Inlet sockeye
- Thompson River steelhead
- Lower Georgia Strait chinook
- Mainland Inlet Pinks
- Inshore Rockfish

It has been an immensely challenging year to manage 2005 Fraser River sockeye fisheries. Fisheries managers not only had to take steps to protect stocks of concern, such as Cultus Lake sockeye and Early Stuart sockeye, but also had to deal with environmental factors that caused reduced marine-survival and record late-timing for most Fraser stocks. The 2005 sockeye season is unprecedented, with marine survival appearing to be a key factor causing a reduction in abundance for some sockeye stocks, combined with very late and protracted sockeye migration. Never before in our experience or records have the Fraser River sockeye stocks been so protracted in the duration of their migration timing, nor so late arriving in coastal waters. The 50% date to Area 20 of Fraser River sockeye by management group is outlined in the table below. You'll note that for each of these groups not only were these stocks very late, but all, with the possible exception of late run stocks, set new records for their migration timing in 2005. For illustrative purposes the 2005 migration timing graph to the long term average is also shown.

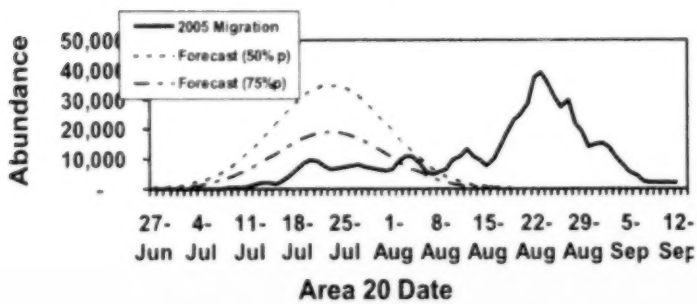
50% Date to Area 20	Early Stuart	Early Summers	Summers	Lates (Weaver/Adams)
Long term average 50% date	July 3	July 23	August 8	August 14
50% date in 2005	July 16	August 20	August 23	August 31
Previous latest recorded 50% date	July 12	July 29	August 17	August 30

As a result of the unusual 2005 sockeye migration it was not until late August that a surplus of sockeye beyond conservation and First Nation food, social and ceremonial (FSC) requirements was identified. For this reason, recreational fisheries in the lower Fraser River and commercial sockeye fisheries remained closed due to low numbers long past the usual time we would normally see fisheries commence on sockeye.

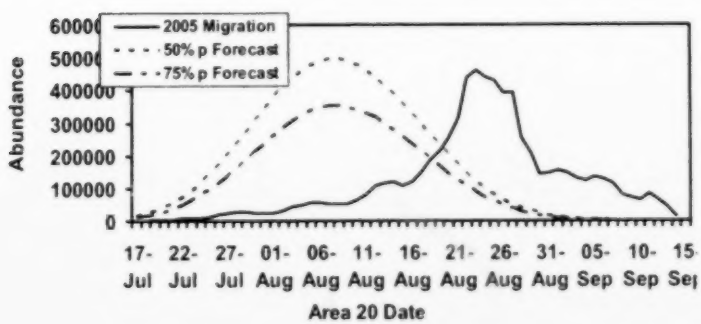
2005 Early Stuart Migration



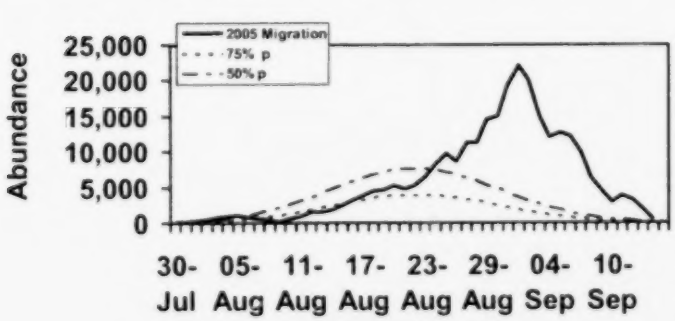
2005 Early Summer



2005 Summer Run Sockeye Migration



2005 Weaver/L. Misc Sockeye Migration



forecasts used for pre-season planning purposes are shown in the table below:

Run Timing Group	Pre season forecast (% probability forecast)	Final In-Season estimate of run size using Mission data
Early Stuart	258,000 (50%)	209,500
Early Summer	718,000 (50%)	805,000
Mid-Summer	11,048,000 (50%)	7,000,000
Late Run	524,000 (50%)	760,000
Total Fraser sockeye	***12,548,000***	***8,774,500***

The strong return of Harrison sockeye (260,000) compared to forecast (inferred to be 90,000 as there is no direct forecast made for Harrison fish) contributed heavily to the larger than forecast return of Late run sockeye.

The total Canadian harvest of 1.1 million sockeye was much less than the pre-season modelled expectation of 3.1 million sockeye. The final in-season estimated exploitation rate on Late-late sockeye stocks of 9% is below the pre-season goal of 15% based on the current estimate of run size and river entry date. The unusually late timing, uncertain run sizes and abnormal migration of sockeye in 2005 were the main contributors to the low catch. During the time leading up to the late July to early August fishing window identified in the preseason: Early Stuart sockeye were still migrating through in a higher than expected percentage, Early Summer and Summer run sockeye run size appeared to be much lower than the 75p-level forecast, and Late run sockeye were being identified in higher than expected proportions. The current estimated exploitation rate for Cultus sockeye is 7% largely due to increases in run size very late in the season. Work is ongoing with respect to the late run, Cultus exploitation rate calculations with the expectation of final estimates by the January Pacific Salmon Commission meetings.

Fisheries

Harvest opportunities on Summers were limited on the front end by the late and skewed migration of Early Stuart and Early Summer sockeye and on the back end by the continuous presence of the Late Run stocks, which were first identified in approach waters (Area 20 gillnet) in the July 13th -16th DNA sample. This was the fourth year in which DNA analysis was used extensively to identify the different Fraser River sockeye stocks.

Sockeye-directed harvest opportunities were available in Canada for First Nations FSC and recreational harvesters. However, the in-river recreational fishing opportunity was of shorter duration and occurred one month later than in previous years. Commercial harvesters did not have any sockeye-directed fisheries this season, but were allowed to retain sockeye as by-catch in the September pink-directed fisheries. The final in-season estimates of escapement provided from the Mission hydro-acoustics program suggest that the gross escapement goals were close to being met or exceeded for all run timing groups.

As in recent years, the Late Run sockeye migration into the Fraser River in 2005 was early. DNA analysis of samples taken from the Whonnock in-river test fishery showed the presence of Late Run sockeye in the July 20th – 21st sample, which steadily progressed through the season.

Preliminary estimates of Fraser River sockeye catch in 2005 are as follows:

Total Fraser Sockeye Caught	**1,635,000**
Test/charter fisheries	118,000
Canadian Catch	**1,127,000**
Canadian commercial fisheries (includes commercial selective & FN economic)	137,000
Canadian First Nation fisheries	940,000
Canadian recreational fisheries	50,000
United States Catch	**390,000**
U.S. Treaty Indian & non-treaty Indian fisheries	384,000
U.S. Treaty Indian ceremonial fisheries	7,000

The above numbers reflect the PSC 05-C&R Summary.xls file from October 31, 2005. Test/charter catch includes 750 sockeye caught in the Albion test fishery.

Stock Status

The preliminary spawning ground escapement estimates for Early Stuart and Early Summer sockeye are 96,600 and 222,600 respectively, which are well below the escapement goals of 164,000 (Early Stuart) and 397,000 (Early Summer) based on in-season run size estimates. When the management adjustment due to environmental conditions is taken into account the predicted spawning escapement for Early Stuart and Early Summers is estimated to be 102,000 and 334,000 respectively. The in-season gross escapement estimates from the Mission hydroacoustics program for the Mid-Summer Run, Birkenhead, and Late Run (excluding Birkenhead) escapement are 6,651,000 (Summer); 177,000 (Birkenhead); and 521,000 (Lates). A summary of preliminary spawning escapement estimates for all stock groups will not be available until late January, 2006.

Due to their later than historically recorded 50% migration dates, the Early Stuart and Early Summer run timing groups, experienced higher than normal water temperatures during their in-river migration. As a result of these conditions the management adjustment model projected en-route losses of 44,000 Early Stuart and 369,000 Early Summers in 2005. Environmental conditions during the Summer run migration period were closer to normal for this group and as a result minimal en-route losses are expected. Migration conditions during the majority of the Late Run sockeye migration into the Fraser River were more favorable; however, en-route and pre-spawn losses were still anticipated to occur as a result of the early entry behavior and associated parasite issues as experienced in recent years.

Fraser River Pink Salmon

The forecasts for Fraser River pink salmon at the 75% and 50% probability levels (11,700,000 and 16,300,000 respectively) were well above the escapement goal of 6,000,000. However, concerns for co-migrating Late Run sockeye and other species of concern limited harvest opportunities. It was agreed by both countries that any fisheries

directed at Fraser River pink salmon would be conducted in a manner consistent with the Late Run sockeye guidelines.

Preliminary estimates of Fraser River pink catch in 2005 are as follows:

Total Fraser Pink Salmon Caught	**1,029,000**
Test/charter fisheries	85,000
Canadian Catch	**636,000**
Canadian commercial fisheries (includes FN economic fisheries)	338,000
Canadian First Nation fisheries	251,000
Canadian recreational fisheries	47,000
United States Catch	**308,000**
U.S. Treaty Indian & non-treaty Indian fisheries	295,000
U.S. Treaty Indian ceremonial fisheries	13,000

The above numbers reflect the catch estimates reported in the PSC file "2005 Fraser Pink Catch update (to Nov-9 2005).xls" and the Lower Fraser Area First Nations catch as reported by the Fishery Operating system on 10-Nov-2005.

The final in-season estimate of run size for Fraser River pink salmon is 10,000,000 fish, with a 50% peak of migration through Area 20 of August 25, which is four days earlier than the pre-season estimate of August 29 and six days earlier than average. The PSC was not able to generate daily estimates of pink salmon migration in the lower Fraser River. A mark-recapture estimate of adult escapement will not be available this year. However, a fry estimate will be conducted in the spring of 2006. The forecast return of adults in 2007 will be based upon the total estimated downstream fry estimates.

Southern B.C. Chinook Salmon

Chinook salmon in southern BC are managed under the coastwide management regime agreed in the 1999 PST. This includes AABM in southeast Alaska, Northern BC, and off the WCVI. In Southern BC all AABM chinook fisheries are located on the WCVI.

The offshore recreational fishery, First Nations fisheries, and the WCVI Area G troll fishery are all components of the AABM chinook fishery. For the period October 2004 through September 2005 the chinook abundance index was 0.88 of the base period (calib. #0506) as forecasted by the Chinook Technical Committee of the Pacific Salmon Commission. This provided a total allowable catch of 188,200 chinook for the WCVI AABM fisheries.

Pre-season anticipated harvest and Post Season Preliminary Catch Estimates for 2004-2005 AABM

	Pre-season	Post Season
WCVI Abundance	0.88	unknown
WCVI AABM Chinook TAC	188,200	NA
Offshore Recreational Catch	40,000	55,793
First Nations Catch	5,000	5,000
Area G Troll Catch	143,000	143,614
TOTAL AABM CATCH		**204,407**

WCVI AABM Chinook Fisheries

Recreational

The WCVI recreational fishery was monitored through a creel survey and reported catches from lodges. The creel surveys monitor catch from both the AABM and ISBM chinook fisheries The WCVI sport fishery was monitored through a creel survey and reported catches from lodges. Creel observers conducted 10,532 fishing interviews from 1 landing sites from June 01 until September 30 representing 12% effort coverage the 2005 season. Additional sources of catch and effort information from charter patrolmen and fishery officers were used to bolster effort counts and in some areas CPUE.

Recreational AABM areas along WCVI imposed selective fishing regulations such as barbless hooks and size regulations in order to lower post-release mortality and impacts on younger migrating and feeder stocks. For the AABM sport fishery the chinook daily bag limit was two chinook greater than 45 cm. The WCVI chinook stocks of concern are assumed to migrate along near shore areas, therefore additional conservation measures were not imposed with in the WCVI AABM areas.

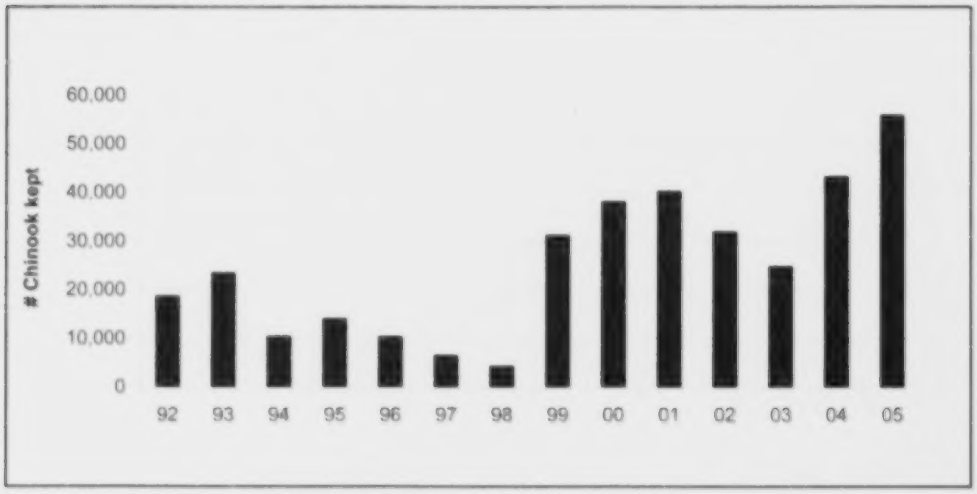
AABM chinook sport catch by statistical area.

Statistical Area	Catch
21/121	11,341
23/123	33,405
24/124	8,154
25/125	201
26/126	2,100
27/127	592
TOTAL	**55,793**

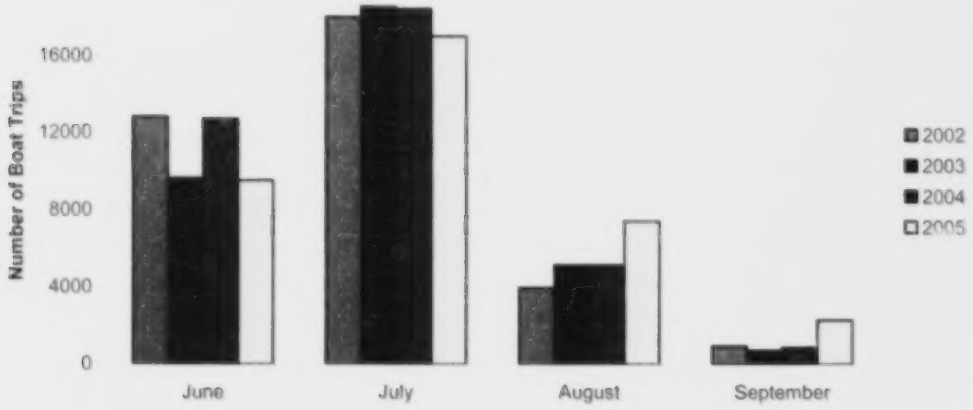
The estimated 2005 AABM sport catch was approximately 55,793 chinook. In 2005, 22% more AABM chinook were caught than in 2004. The estimated 2005 AABM sport effort was approximately 36,256 boat trips. In 2005, 3% less AABM boat trips were made than

in 2004, although the monthly AABM fishing effort was higher in August and September (where CPUE's are also the highest seasonally) in 2005 than in 2004.

AABM Chinook catch from 1992 to 2005.



AABM recreational effort from 2002 to 2005.



First Nations Fisheries

In 2005 First Nations AABM chinook catch was estimated to be 5,000.

Commercial

In 2005, WCVI chinook fisheries continued to be shaped by conservation concerns for spring-run timing upper Fraser River chinook, upper Fraser River and Thompson River coho, and WCVI origin chinook salmon, as well as Strait of Georgia (SG) chinook. To protect the early spring-runs of upper Fraser chinook the WCVI troll fishery was closed in areas where these chinook were known to present between mid-March and mid-April. To protect Thompson coho, chinook troll fisheries were closed after the middle of May. To protect SG chinook offshore SWVI areas (123 to 127) were closed from the entire month of March, and from April 1 to April 27. This closure was based on a review of CWT which compared the ratio of Lower Strait of Georgia (LGS) chinook to the overall catch of chinook

by time and area on the WCVI. The May harvest level was also reduced from 51,486 in 2004 to 26,655 in 2005. WCVI troll fisheries were also closed until mid-September to protect local WCVI chinook stocks. Selective fishing practices were mandatory, including single barbless hooks and "revival tanks" for resuscitating coho salmon prior to release. Size limits for commercial troll remained unchanged for 2005 at 55 cm (fork length).

Since 1999, a major objective for the management of the WCVI troll fishery has been to distribute the catch throughout the fall-winter-spring-summer periods. This objective was continued in 2005. All offshore areas south of Estevan Point (areas 124 and 123) were closed from April 1 to April 27 to avoid impacts on SG chinook, and the May harvest was substantially reduced as mentioned. These measures not only reduced the impact on SG chinook, but distributed the exploitation of chinook over a longer time period and a broader suite of stocks. In consultation with Area G Advisors, it was also agreed that there would be no fisheries in June in order to permit a September fishing opportunity.

WCVI Area G troll fisheries during the 2004/2005 period.

Areas open*	Majority of catch from:	Fishing Period	Chinook Catch
123-127	123, 126	Oct. 1–2, 2004	11,256
23-27, 123-127	123	Nov. 1-4, 2004	8,057
23-27, 123-127	123	Dec. 6, 13, 19-2004	134
23-27, 123-127	23	Jan. 10- 31, 2005	1,862
23-27, 123-127	126	Feb. 7-12,22-22, 2005	5,650
23-27, 123-127	125,126	Mar.1-14,21-30, 2005	16,247
23-27, 125-127	126	Apr. 1-27, 2005	39,269
23-27, 123-127	123,125	Apr. 28-30, 2005	17,794
23-27, 123-127	126	May 1-2, 2005	12,197
23-27, 123-127	123	May 12-13, 2005	14,458
26-27, 124-127	126	Sep. 17-21, 24-30, 2005	16,690
		TOTAL	**143,614**
TOTAL COMMERCIAL ALLOWABLE CATCH			**143,200**

Sub-area and zone closures were in effect within many of the open statistical areas. Refer to DFO Fishery Notices for further clarification.

Fisheries were monitored to determine encounter rates of other species and released chinook. Biological sampling was conducted for such things as size distributions, and stock compositions (via CWT, DNA and otolith samples).

Southern BC Chinook ISBM

In addition to the PST regime, Canada implements management actions as required to ensure conservation of Canadian origin chinook and meet domestic allocation requirements. These chinook fisheries are managed to harvest rates on an individual stock basis (ISBM). Measures were taken in 2005 to protect WCVI, Lower Georgia Strait (LGS) and upper Fraser River chinook stocks.

In 2005 specific management actions were taken to protect WCVI origin chinook in Canadian fisheries, the harvest of which was restricted to an exploitation rate of up to 15%. Most Southern BC commercial fisheries were regulated so that impact on WCVI chinook stocks was minimized. Productive Robertson Creek hatchery origin chinook were harvested in the terminal area of Alberni Inlet by First Nations, recreational and commercial net fisheries. WCVI troll fisheries were closed until mid-September to protect local WCVI chinook stocks. There were no fisheries in areas 23 to 27 during July. August, and September; and therefore there were no ISBM catches of any west coast stocks by troll.

LGS chinook stocks are in a period of low productivity requiring increased measures in 2005 to further protect them. Recreational non-retention areas were implemented in the Gulf Islands, near Cape Mudge and near Powell River to reduce impacts at critical times and in key areas. Commercial retention of chinook was again not permitted in seine fisheries and incidental non-retention was implemented in all inside (Area H) troll fisheries. Commercial gill nets were again permitted to retain incidental dead chinook while releasing those that were alive.

For commercial troll, SWVI was closed from April 1 to April 27 to protect LGS chinook stocks. This closure was based on a review of CWT which compared the ratio of LSG chinook to the overall catch of chinook by time and area on the WCVI. The May harvest level was also reduced from 51,486 in 2004 to 26,655 in 2005.

In addition to these specific restrictions, area and time closures were in place to protect returning upper Fraser chinook stocks during sport and commercial fisheries. There was a general requirement to apply selective fishing techniques, including area and gear restrictions and the mandatory use of revival tanks in all commercial fisheries. Catch monitoring included requirements for daily catch reporting, mandatory logbooks, hailing catches on a regular basis, and independent on-board observers on vessels when requested. Post-release mortality information for chinook included in ISBM management were determined from studies conducted in 2000-2001 and detailed in the Canadian Stock Assessment Secretariat, Research Document 99/128 (CSAS, Doc 99/128).

Preliminary chinook estimate of First Nation, recreational and commercial ISBM catch and release for 2005 is shown in the following table.

	Catch	Release
ISBM Recreational	108,572	40,018
ISBM First Nations	95,542	0
ISBM Commercial	24,038	811
Total	228,152	40,829

Recreational

The recreational ISBM chinook fishery is monitored using creel surveys and regulated using over/under limits and an area/bag restrictions. Depending on the area catch regulations include an annual bag limit of 15-20, a daily bag limit of 2 and a size limit of 45-62 cm.

2005 ISBM chinook catch in recreational fisheries.

Year	Fishing Area	Survey Period	Chinook Kept
2005	Johnstone Strait	Jul - Aug	12,004
2005	Georgia Strait	May - Oct	11,972
2005	Fraser River	June - September	13,724
2005	Juan de Fuca Strait	January – October	29,248
2005	West Coast Vancouver Island	June – September	41,624
2005	TOTAL		108,572

First Nations Fisheries

First Nations fisheries were conducted with and without agreements in place in 2005. The reported catch estimates are a combination of FSC allocations and economic opportunity fisheries.

Year	Fishing Area	Chinook Kept
2005	Johnstone Strait	163
2005	Georgia Strait	NA
2005	Fraser River	55,379
2005	West Coast Vancouver Island	40,000
2005	TOTAL	95,542

Commercial Fisheries

In 2005 several commercial fisheries targeted ISBM chinook including seine and gillnet fisheries in Alberni Inlet, gillnet and troll fisheries in the Fraser River, and gillnet fisheries in Tlupana Inlet. Retention of chinook caught as bycatch was permitted in some fisheries, and in others non-retention was in effect.

Year	Licence Area	Chinook Kept
2005	Area B Seine	4,754
2005	Area D Gillnet	19,099
2005	Area E Gillnet	1
2005	Area G Troll	184
2005	Area H Troll	0
2005	TOTAL	24,038

Stock Status

Upper Fraser Chinook

To date, only preliminary numbers are available; data are not yet validated, and intensive population estimates have yet to be analyzed. Early spring chinook returns were poor to very poor across the board. Spius (<300) and Coldwater (>200 spawners) and upper Chilcotin was critically low at under 100 spawners. Most escapements for upper river and later lower Thompson spring populations were well below their parental brood escapements (i.e. Nicola R. approx. 3000 spawners from a parental brood of almost 9,000); however some stocks did return at close to brood year levels. Spawning and counting conditions were good, although arrival times were delayed. The preliminary spawner numbers correlate well with the Albion test fish index that was well below the lowest previously observed.

Summer chinook returns were patchy, and generally below brood escapements, although the late south Thompson was strong. Yearling summer returns were poor to fair (Chilko ~8000, Nechako ~3500 and Quesnel ~3,000. Under-yearling summer returns were also patchy with South Thompson being the bright spot at ~60,000; however Lower Shuswap and Middle Shuswap failed to meet their brood year escapements at ~18,000 and ~1,800.

Lower Fraser Chinook

The Lower Fraser Area (LFA) can be divided into four sub-areas: lower Fraser River, Howe Sound/Squamish River, Burrard Inlet and Boundary Bay. Chinook returning to some of these sub-areas within the LFA, are part of larger assessment units under the jurisdiction of other Areas (e.g. Howe Sound/Squamish River chinook are included in the larger Southern Mainland chinook aggregate that is managed out of South Coast Area). Chinook status in these larger assessment units are reported elsewhere in this document. However, the LFA does maintain oversight to any chinook assessment work conducted in these sub-areas and the results to date are included here.

Chinook assessment data in these sub-areas come from a variety of sources. In 2005, these include Aboriginal Fisheries Strategy (AFS) projects, community-run Salmonid Enhancement Program (SEP) projects, and Oceans, Habitat Enhancement Branch's (OHEB) major SEP facility projects. Attempts are made to have these projects complement o' ience Branch funded LFA Stock Assessment (StAD) projects.

Lower Fraser River:

Spring-run: Early returning chinook in the lower Fraser to systems such as the Birkenhead, upper Pitt, Big Silver, Sloquet and upper Chilliwack (Dolly Varden Creek) Rivers remain poorly assessed overall. In 2005, LFA StAD conducted visual surveys of the escapement to the upper Pitt and Big Silver Rivers. Preliminary estimates of adult chinook escapement to these two systems are 290 and 240, respectively. Similar to previous years, AFS funded projects with Lil'wat Nation and Douglas Band contributed significantly to our assessment of this stock aggregate by conducting studies on the returns to the Birkenhead and Sloquet Rivers. Preliminary estimates of adult chinook escapement to these two systems are 1,390 and 60, respectively. Although the Birkenhead estimate is the largest return in recent history and more than triple the estimate of 404 chinook in 2000 (the brood's parental escapement year), all the other assessments indicate low abundance for this stock aggregate and as a result, stock status for LFA spring-run chinook is low.

Summer-run: Summer-run chinook in the lower Fraser River do not have a reliable time series of escapement information. Maria Slough and hatchery-run populations of transplanted stocks in the Chilliwack and Chehalis Rivers are part of this stock group. In 2005, LFA StAD undertook an assessment of Maria Slough escapement with a member of the Seabird Island First Nation. Preliminary estimates of chinook escapement to Maria Slough are 340 and 100, for adults and jacks respectively. These estimates are considerably less than escapements of approximately 1,000 adult chinook estimated to have returned in both 2002 and 2003, the last two years of reliable escapement data. Limited information is obtained from other data sources (e.g. for Chilliwack and Chehalis summer-run returns). Overall, existing information indicates a low stock status for LFA summer-run chinook.

Fall-run: Lower Fraser River fall-run chinook stock group escapements are, on average, large (>100,000). The major contributor and principal focus of this stock group is those chinook returning to the Harrison River. Harrison River transplants to the Chilliwack and Stave Rivers also contribute significantly to the overall escapement of this stock group but this contribution is primarily driven by the number of hatchery releases. In 2005, both the Harrison and Chilliwack River returns were assessed by LFA StAD. As in previous years, members of the Chehalis Indian Band were hired by LFA StAD and contributed to the Harrison assessment. Results from these two projects are currently being analyzed; however, early indications are the 2005 Harrison River adult chinook escapement will fall somewhere near the lower bound of the escapement goal range (75,100 to 98,500 adult chinook) for this population. Estimates of escapement to the Chilliwack and Stave Rivers are currently not available.

Howe Sound/Squamish River:

OHEB's Tenderfoot Hatchery brood stock collection program (in Howe Sound) and a Squamish First Nation AFS funded chinook assessment project are contributors to our knowledge of chinook salmon stock status in this sub-area. There are no intensive chinook assessment projects currently being conducted in this sub-area. Difficulty lies in determining whether the current suite of projects provides an accurate index of escapement As a result, determination of a stock status for chinook from this sub-area remains a challenge. Current year Squamish First Nation AFS data is not available. Chinook returning to this sub-area are deemed to part of the Southern Mainland chinook aggregate. Information pertaining to this larger aggregate is provided elsewhere in this document.

Burrard Inlet:

OHEB's Capilano Hatchery and a small FN AFS funded assessment project are contributors to our knowledge of chinook salmon stock status in this sub-area. Although the Indian River may have supported moderate sized runs of chinook salmon in the past, it is currently thought the numbers of natural chinook escaping to this sub-area remains extremely small. Significant numbers of chinook releases from the Capilano Hatchery return to the Capilano River and surrounding area. These annual releases are predominately from stock of Harrison River origin (via Chilliwack Hatchery). As a result of the extremely limited natural chinook salmon production from this sub-area, there are no intensive chinook assessment projects currently being conducted. Current year SEP and AFS data is unavailable at present.

Boundary Bay:

Community-run Salmonid Enhancement Program (SEP) projects contribute significantly to chinook returns to this sub-area. Limited core assessments have been conducted by LFA StAD staff in the past; however, none were conducted in 2005. Current year SEP data is unavailable at present.

Strait of Georgia Chinook

Fall Stocks:

Total returns to Vancouver Island streams north of Nanaimo, virtually all of which are enhanced, have been stable for the last five to seven years (Puntledge and Englishman) or 15 years (Big Qualicum and Little Qualicum). All are at generally higher river abundances than previous years back to 1975. On the mainland side of the northern Strait, Sliammon and Lang hatcheries have had variable and slowly increasing returns, respectively. There are a few very small wild populations remaining in Theodosia River and Jervis Inlet, where assessment data are poor. Typical spawner counts are less than 20. Large proportions of chinook in the aggregate of stocks north of Nanaimo migrate into central and northern BC and Alaska. They have been exploited at gradually diminishing rates over the last 15 years, so the stable returns to river seen in this period actually reflect diminishing total abundance.

Returns to Nanaimo R. have also been stable since 1995 at higher levels than those recorded back to 1975. The area of most concern is further south, where both Chemainus and Cowichan chinook stocks have had decreasing returns to the river since 1995-1996. Natural spawning escapements are inadequate and the status of these populations is low. Unlike central and northern Strait stocks, both populations rear largely in the Strait, with a minority moving to the west coast of Vancouver Island. Exploitations have increased gradually since 1998, although further conservation measures were instituted in 2005 and it is too soon to estimate the extent of their effect. After deducting in-river First Nations catch and brood stock captures, the natural spawning escapement to Cowichan is near a record low. The short term outlook for Cowichan chinook is further diminished by a complete die-off of 2004 brood chinook in the Cowichan Hatchery.

Mainland Inlet hatchery returns (Lang, Sliammon) were down from last year with the overall trend showing some decline in recent years. Historic records are very poor for natural stocks (Theodosia, Skwakwa), but recent years have shown critically low numbers of spawners.

Spring/Summer stocks:

Of the three early runs in the Strait, assessment data are available for Puntledge and Nanaimo; the Cowichan summer run still exists but it is small and we do not have quantitative data for it. Efforts to recover Puntledge summers to viable levels have resulted in improved returns to the river since 1999. The 2005 escapement of more than 3,000 was a record high for the analysis period (1975 to present). Exploitation climbed sharply in 2002 and 2003 to 60%, which is a concern (an estimate of the 2004 exploitation is not yet available). Nanaimo spring and summer chinook abundances are poorly known but appear to be stable at a much lower level than seen in the 1970's.

West Coast Vancouver Island Chinook

Escapements to most natural chinook systems declined over levels observed in the previous three years, particularly in some areas of concern such as Kyuquot and Clayoquot Sound and the Nahmint stock in Area 23. This decline was anticipated as both the 2000 and 2001 brood year escapements were poor and the return of younger fish from these brood years has also been low in the past two years. It appears that natural WCVI chinook stocks are still limited by brood escapement in some years. The 1995 and 1996 brood years of this same cycle were severely impacted by the strong El Nino of the mid-1990s, during which unfavourable marine conditions resulted in a major decline in marine survival rate and subsequent abundance of WCVI chinook.

Chinook escapements to hatchery or enhanced systems also declined. The terminal return for Stamp River/Robertson Creek Hatchery was approximately 30 % below pre-season forecast levels. Notwithstanding this, the return was still 83% of average levels and supported relatively large terminal fishing opportunities. Escapement to the Somass system is estimated at approximately 36,000 adults, which is slightly above the 2005 escapement target. Similar to Robertson Creek, chinook returns to Conuma and Nitinat hatcheries were down from levels observed in 2004, but terminal fisheries on these stocks were also supported.

Johnstone Strait/Mainland Inlet Chinook

Currently only 2 systems are monitored in Areas 12 and 13 with some level of consistency. The Nimpkish River is monitored using standardized swim surveys and stream walks by the hatchery staff. The Quinsam hatchery staff conducts an intensive mark-recapture program to estimate escapement on the Quinsam/Campbell system. Other systems are covered using intermittent visual surveys.

Nimpkish:

As a result of the high water conditions, only a few visual observations were conducted to determine chinook abundance in the Nimpkish River. Although coverage of the Nimpkish system in 2005 has been poor, the observations made would indicate similar return levels as recent years. While the chinook returns appear to have stabilized, abundance levels are still extremely depressed in comparison to the historic dataset. The poor weather conditions impeded brood stock capture leading to well below target levels currently in the hatchery.

Quinsam/Campbell:

Preliminary escapement estimates indicate that the total return for both adults and jacks in both Campbell and Quinsam Rivers will be slightly less than 2004, but still better than average. Escapement levels over the past couple of years seem to be holding at a steady level. The brood stock goal of 1558 adults (779 males + 779 females) was attained.

Southern BC Coho

The forecast of 2005 abundance indicated that the status of interior coho in the Fraser River system remained critically low. The lower Fraser-Georgia basin east and west as well as Johnstone Strait coho management units were all forecast to be of low status. WCVI coho were forecast to return poorly but there was no suggestion of a trend and their status was considered to be moderate.

Consequently, in 2005, interior Fraser coho were a primary concern in implementing fisheries. Under the Abundance Based Management provisions in the Pacific Salmon Treaty, the US was limited to a maximum 10% exploitation on interior Fraser coho. In Canada, the management objective for these coho in 2005 was to limit the total mortality to a ceiling of 3% across all Canadian fisheries. The total exploitation on interior Fraser coho was therefore limited to a maximum of 13%.

To ensure this limit was not exceeded in Canadian fisheries, non-retention of wild "unmarked" coho was required in many sport and commercial fisheries operating in areas of southern BC where Thompson River coho were known to be prevalent. Terminal areas along the west coast Vancouver Island (WCVI) and also a small portion of upper Johnstone Strait and Queen Charlotte Strait for a short time period (1 wild coho retention was permitted in Area 11 and upper Area 12 from June 15 to Aug 2) were excluded from the requirement for wild coho non-retention. The only non-terminal area where coho retention was permitted was on the WCVI, where the Area G troll fishery began retaining hatchery coho in September 2005.

Post-release mortality rates were based on studies conducted in 1999-2001 and detailed in the Canadian Stock Assessment Secretariat, Research Document 99/128 (CSAS, Doc 99/128). The mortality rates for legal size coho by gear type were: Seine 25%; Gillnet North 70% and South 60%; Troll 26%; Sport 10%.

Preliminary coho catch estimate of the recreational, First Nation, and commercial ISBM catch and releases for 2005.

	Catch	Release
ISBM Recreational	59,987	89,531
ISBM First Nations	4,913	43
ISBM Commercial	5,989	18,327
Total	70,889	107,901

Recreational

Non-retention of wild "unmarked" coho was required in all sport fisheries operating in areas of southern BC where Thompson River coho were known to be prevalent, including the mixed stock areas of the WCVI (Statistical Areas 21-27, 121-127), Strait of Juan de Fuca (Statistical Areas 19-20), Strait of Georgia (Areas 14-19, 28, 29), and the majority of Johnstone Strait and Queen Charlotte Strait (Statistical Areas 11, 12 and 13). (Statistical Areas 11, 12 and 13). In terminal areas where Thompson coho were not considered to be impacted, retention of wild coho was permitted.

2005 coho catch in recreational fisheries.

Year	Fishing Area	Survey Period	Chinook Kept
2005	Johnstone Strait	Jul - Aug	9,101
2005	Georgia Strait	May - Oct	1,410
2005	Fraser River	June - September	0
2005	Juan de Fuca Strait	January – October	7,602
2005	West Coast Vancouver Island	June – September	41,874
2005	TOTAL		59,987

First Nations

First Nations fisheries were conducted with and without agreements in place in 2005. The reported catch estimates are a combination of FSC allocations and economic opportunity fisheries.

Year	Fishing Area	Chinook Kept
2005	Johnstone Strait	1,677
2005	Georgia Strait	NA
2005	West Coast Vancouver Island	2,430
2005	Fraser River	806
2005	TOTAL	4,913

Commercial Fisheries

In 2005 Southern BC commercial fisheries were generally regulated so that impacts on coho, and especially Thompson coho stocks, were minimized. Terminal opportunities to retain by catch coho during directed chinook fisheries were available to Area B seines, Area D gillnets and Area G trollers in Alberni Inlet. In Tlupana Inlet the retention of coho was permitted during directed chinook and chum fisheries by Area D gillnet and Area G troll.

Year	Licence Area	Chinook Kept
2005	Area B Seine	2,425
2005	Area D Gillnet	1,563
2005	Area E Gillnet	0
2005	Area G Troll	1,997
2005	Area H Troll	4
2005	TOTAL	5,989

Stock Status

Upper Fraser Coho Stocks

While field programs to estimate escapements are currently underway, early returns to Thompson systems (Louis, Lemieux, Eagle, and Coldwater) have not been encouraging. Preliminary indications from a system-wide telemetry study indicate escapements to the entire interior Fraser are likely substantially less than the brood year levels and are about 20,000, however it is too early to accurately determine the final number. Near final estimates will not be available until March; and data entry and verification are not yet even underway for any systems. Again, at this time, early spawner levels appear to among the poorest observed since 2001.

Lower Fraser Coho Stocks

The Lower Fraser Area (LFA) can be divided into four sub-areas: lower Fraser River, Howe Sound/Squamish River, Burrard Inlet and Boundary Bay. All of the coho returning to these sub-areas within the LFA are deemed to be part of a larger Strait of Georgia stock aggregate. Responsibility for the management of this large Strait of Georgia aggregate falls to all of the Areas in Southern BC (e.g. South Coast Area, LFA, BC Interior Area). Overall status of these larger assessment units are reported elsewhere in this document. However, the LFA does maintain oversight to any coho assessment work conducted in the LFA sub-areas and the results to date are included here.

Coho assessment data in these sub-areas come from a variety of sources. In 2005, these include Aboriginal Fisheries Strategy (AFS) projects, community-run Salmonid Enhancement Program (SEP) projects, and Oceans, Habitat Enhancement Branch's (OHEB) major SEP facility projects. Attempts are made to have these projects complement our Science Branch funded LFA Stock Assessment (StAD) projects.

Lower Fraser River:

The PST wild coho indicator stock for the lower Fraser River is the Salmon River (Langley), a low gradient urban stream. Historically, intensive combinations of fence/trap and mark-recapture techniques were used to assess both smolt production and adult escapement in this system since 1986. However, due to funding pressures in 2005, only the smolt assessment was conducted.

The preliminary number of smolts emigrating from the Salmon River system this past spring (2005), based on a fence census, was 58,800 (previous 4-year average was 57,500). These smolts are the brood of an estimated 2,012 females that returned and spawned in 2003/04; the vast majority of these smolts will return as 3-year-olds in 2006. Lower water levels allowed us to maintain the integrity of the fence throughout smolt migration in 2005 and for five of the past eight years. The average difference between the fence census and a concurrently derived mark-recapture estimate for these five years is 43% (i.e. the fence census is on average, slightly more than ½ of the mark-recapture estimate). In 2005, the smolt mark-recapture estimate was 115,800; a difference of 57,000 when compared to the fence census of 57,500 (or 49% of the mark-recapture estimate) Differential mortality associated with marking and predation on the marked group as they migrate from the mark application site to the recapture site, are believed to be contributing factors to the observed difference. In addition, no estimate of pre-smolt emigration is derived for this coho stock. Consequently, caution is recommended when using smolt abundance data as a predictor of subsequent adult returns.

A complementary hatchery coho indicator stock is assessed at Inch Creek by OHEB's Inch Creek Hatchery. Currently, coho adults have only started to enter the hatchery in any significant numbers in the last half of November. In addition, carcass recovery effort has only now picked up. Consequently, it is too early to provide an estimate of run strength and as a result, stock status, for this hatchery population.

Similar to last year, the mark-recapture project on adult coho returning to the upper Pitt River was not conducted. This project provided a quantitative assessment of a significantly large "up-land" lower Fraser River stock.

On a number of systems within the lower Fraser River sub-area, adult coho visual surveys are being conducted in 2005. While significant numbers of these systems are being assessed by LFA StAD staff, other major contributors to this type of assessment in the LFA include AFS funded First Nations projects, community-run SEP projects, and OHEB's other major facilities (e.g. Chilliwack Hatchery). It is too early to provide a quantitative assessment of these 2005 data as these projects will continue into the new-year.

Howe Sound/Squamish River:

OHEB's Tenderfoot Hatchery and an AFS funded coho assessment project are significant contributors to our knowledge of coho salmon stock status in this sub-area. Current year data is not available at present.

Burrard Inlet:

OHEB's Capilano Hatchery, a community-run SEP project (Seymour River Hatchery) and a small AFS funded assessment project are contributors to our knowledge of coho salmon stock status in this sub-area. Although significant returns of natural coho salmon to systems such as the Seymour and Indian Rivers are thought to be occurring, this sub-area is principally dominated by the Capilano Hatchery returns to the Capilano River. Current year data is not available at present.

Boundary Bay:

Community-run Salmonid Enhancement Program (SEP) projects contribute significantly to coho returns to this sub-area. Limited core assessments have been conducted by LFA StAD staff in the past but not in 2005. Current year data is not available at present.

Overall, with LFA adult coho assessments continuing into February 2005 in some instances, a determination of coho salmon stock status in the LFA, or any of the sub-areas, for 2005 is not possible at this time.

Strait of Georgia Coho Stocks

This section deals with the Georgia Basin excluding the lower Fraser, Squamish and Burrard Inlet portions, which are discussed above. Catch restrictions are allowing a large proportion of the total return to be passed through to escapement, i.e. escapements are good estimators of total abundance. It is normally too soon to be conclusive about coho escapements this year in the Georgia Basin but it is clear this year that they will be very poor. Escapement to the Black Creek wild indicator will likely be about 60% of optimum but a very low proportion of coded wire tagged fish is telling us that the escapement is largely derived from smolt production from elsewhere, i.e. strays, or, much more likely, from a winter migration at Black, which we think may occur in many coho streams. The marine survival of tagged coho is probably 1.0 -1.5%, which is the lowest seen in the 20 year time series and well

below the forecast of 4%. A survival to escapement of about 2% is needed for a moderately productive coho population to replace itself. It is too soon to evaluate escapements at the Myrtle Creek wild indicator and in streams being surveyed in Areas 16 and 18. Escapements to Quinsam, Puntledge and Big Qualicum hatcheries have all been very poor: 15-20% of recent averages after correcting for reduced releases. These recent average returns were already the product of record low survivals at sea. The survival of this brood will likely be extremely poor.

Next year's returns arise from this year's smolts and wild smolts were probably about 80% of the recent ten year average. Catches of coho in trawl surveys in the Strait this year (2005) point to even poorer survival for coho returning next year. The outlook is for the status of this group to certainly remain poor and signs are it may deteriorate.

West Coast Vancouver Island Coho Stocks

Escapement for coho was variable on the WCVI. Early reports suggested an abundance of coho, particularly in more northerly areas. In retrospect, it appears the return may have been early rather than extremely abundant. In some more southerly areas, escapement in 2005 was much lower than typical, such as the San Juan River.

Counters operate in Area 23 at Stamp Falls and Carnation Creek. The preliminary estimated number of coho at Stamp Falls is approximately 65,000 adult coho. While this observation represents an increase over levels in 2004, it is slightly less than the mean escapement over the last 5 years. About 80% of the Stamp Falls coho are from Robertson Creek Hatchery. Since until very recently the hatchery released approximately constant numbers of smolts each year, the Stamp Falls count is correlated with marine survival. The 2005 data suggest that survival rates for the 2002 brood year were at or slightly below average levels. Escapement to the wild indicator stock, Carnation Creek, will be at or about average levels observed for the system in 2005.

While we have some long-standing concerns regarding the status of wild coho in Clayoquot Sound, the status of WCVI coho as indicated by fry, smolts and adults was generally moderate in 2005. Early to mid-season escapements are variable, but generally near or slightly below average. No persistent downward trends are apparent over the region that would suggest a conservation concern.

Johnstone Strait and Mainland Inlet Coho Stocks

The Keogh River plays an important role as the coho indicator stock for the Upper Johnstone Strait Area. Smolt production in 2004 was one of the lowest on records due to an extremely dry spring. Preliminary indication from the resulting adult escapement in 2005 is that marine survival is similar to last year (~4 to 5%). Smolt production from the Keogh in 2005 was closer to the long term average (~60,000).

Observations in 2005 from extensive escapement coverage in some of the Area 12 Mainland Inlet areas are showing stable returns compared to recent years.

The marine survival indicator for Area 13 is the Quinsam River Hatchery. Early information from Quinsam and other monitored Area 13 stocks are demonstrating significant declines in return abundance over 2004.

Southern Chum

Johnstone Strait

This year constituted the 4th year of the exploitation rate strategy for Study Area Chum in Johnstone Strait. In order to ensure sufficient escapement levels while providing more stabilization of the fisheries a 20% fixed exploitation rate strategy was implemented independent of run size which started in 2002. A preseason planning model was utilized to layout the fishing plan based on expectation of effort and exploitation levels by gear group. Fisheries were conducted based on allocation of the 20% across the user groups of which 15% was allocated to the commercial gear groups. The additional 5% was set aside to satisfy FSC, recreational, test fish and provide a buffer to the commercial exploitation. Past tagging studies conducted in 2000 and 2001 helped in the development of this strategy in assessing the exploitation rate and migration timing of chum stocks in the Johnstone Strait.

In-season information is still being collected and analyzed in regards to the final harvest rate estimation.

First Nations

The preliminary estimated catch by First Nations in the Johnstone Strait area is 19,000 chum.

Marine Sport

The majority of recreational effort directed at chum salmon occurs in the Statistical Area 13 portion of Johnstone Strait. The total catch estimate for the recreational fleet in Area 13 for 2005 was 10,200 chum, of which 5,900 was harvested in the month of October. The 2005 catch represents about half of what was landed in 2004 at similar levels of effort.

The recreational catch in the Statistical Area 12 portion of Johnstone Strait was estimated at 273 chum. This estimate represents catch during the months of July and August due to a directed creel and is likely an underestimate, however recreational effort directed at chum during the month of October is typically low.

Non-tidal sport

There were no directed chum fisheries in non-tidal waters in the Johnstone Strait area.

Commercial

Johnstone Strait study area chum fisheries for commercial seine, gillnet and troll were conducted between September 30 and October 24. Fisheries conducted are as follows:

Area B Seine:

Two competitive seine fishery openings were conducted, the first on Oct 3 (12 hrs) and the second on Oct 24 (10 hrs) for a total catch of 409,018 chum. In addition, this year a pilot demonstration seine fishery was conducted. Vessels had the option of either fishing in the competitive fishery or the demonstration fishery but not both. 39 vessels participated in the demonstration between Oct 6 and 21, these vessels were assigned an individual catch target of 4,672 chum. The catch target was based on effort and catch

from the first competitive fishery. The total catch in the demonstration fishery was 184,354 chum. The total seine catch was 593,372 chum.

Area D Gillnet:

Three gillnet fishery openings (approximately 6 fishing days) were conducted between October 6 and October 19, estimated total catch – 144,982 chum

Area H Troll:

Three troll fishery openings (9 fishing days) were conducted between Sept 30 and Oct 12, estimated total catch – 48,872 chum

The total commercial fishery study area chum catch from Johnstone Strait was 787,226.

Johnstone Strait (Areas 12 and 13)

Fishery Date	Gear type	Effort	Catch
Sept 30 to Oct 2 (3 days)	H - TR	64	13,340
Oct 3 (12 hrs)	B - SN	97	245,677
Oct 4 to 7 (4 days)	H - TR	56	23,640
Oct 6 to 8 (41 hrs)	D - GN	127	46,000
Oct 6 to 21 (demonstration fishery)	B - SN	39	184,354
Oct 11 to 12 (2 days)	H - TR	47	11,892
Oct 11 to 13 (41 hrs)	D - GN	107	37,500
Oct 17 to 19 (37 hrs)	D - GN	97	61,482
Oct 24 (10 hrs)	B - SN	97	163,341
TOTAL			787,226

	Total Catch	% of catch	J.S. Allocation Plan
Area B	593,372	75.5	77% (82% of net share)
Area D	144,982	18.5	17% (18% of net share)
Area H	48,872	6.0	6% (of total commercial)
Total Catch:	787,226		

Note that in addition to the Johnstone Strait mixed stock chum fishery, a terminal chum assessment fishery occurred in Bute Inlet in Area 13 for a catch of 1,650 chum. A chum by catch of 31,015 was encountered during directed commercial Fraser River pink fisheries in September within Johnstone Strait. These catches are not included in the above totals.

Stock Status

Mixed Stocks

The preseason expectation for Study Area Chums suggested average to above average returns to the area. The main component to the return was expected to be the Fraser River stocks, although both Fraser and Non-Fraser components of the return were originating from average brood returns in 2001.

Test fishing commenced on September 16 and was terminated on October 30th. There appeared to be a reasonable abundance of study area chum this year based on test fishing, fishery catches and escapement estimates. Preliminary information on escapements to date lends themselves to continued stabilization of chum returns for the Inside Study Area stocks. In-season information is still being collected and analyzed in regards to total stock size.

Terminal Returns

Summer run chum escapements in Bute Inlet (Orford River) encountered a significant decline in return abundance in comparison to recent years.

At this point we are still in the process of assessing the chum return to Nimpkish River. The current peak count around 30,000 chum is an improvement over the last few years but still below the escapement goal of 110,000.

Fraser River Chum

The escapement objective for Fraser River chum is 800,000. Required protection for co-migrating stocks of concern (i.e. Interior Fraser river coho and steelhead) delays fisheries from the peak of the run (mid October) to the end of the run (late October – early November) although the return has been above the escapement objective for a number of years. Small numbers of short fishery openings have prevented adverse impacts on local chum populations.

Fisheries

Fraser River chum are harvested in Johnstone Strait as well as in the Fraser River. Johnstone Strait fisheries are covered in the following section.

Chum fisheries are severely limited by conservation concerns for Interior Fraser (including Thompson River) coho and Interior Fraser steelhead. The lower Fraser River was closed from September 6 – October 7 below Mission (September 8 – October 10 between Mission and Hope) to all but selective gear to protect Interior Fraser coho. Commercial gill net fisheries are further restricted to the end of October to protect Interior Fraser steelhead. The single most difficult issue the Fraser chum fishery faces is the ongoing problem of conserving small populations of co-migrating Interior Fraser steelhead.

First Nations

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Recreational

Catch in the main stem Fraser recreational fishery began on October 8. Harvest is not being assessed in 2005.

Commercial

Chum test fishing began on September 1 and was conducted on alternate days (alternates with chinook test fishing) until October 21 when chinook test fishing was completed; chum test fishing then continued on a daily basis. Chum catches in the 6.75" chum test net to November 12 total 8,724.

Two Area E (commercial gill net) fisheries took place within specified portions of Area 29 on October 26 and November 2 with estimated catches of approximately 21,000 and 35,000, respectively.

Stock Status

Total Fraser River chum run size is estimated in-season using Albion test fishing catches and a Bayesian model. A run size of 1.7 million was calculated with Albion catch data to November 12. No other escapement estimates for the 2005 return are currently available.

In general the overall status of Fraser River chum is uncertain. While there have been substantial returns in recent years (e.g. 1998) the timing of the run appears to be truncated compared to historical run distribution. Chum used to return to the Fraser River and its tributaries well into December. The run is now essentially over by early November. Whether this is a result of fishing practices, habitat changes to the spawning area that were used by late returning fish (e.g. mainstem spawning areas) or some other currently unidentified factor has yet to be determined. The lack of stock status information is hampering management of the chum fishery. Escapement estimates are based on enumeration of a very few large enhanced systems and even this minimal effort is being impacted by fiscal constraints. The status of small systems and different timing groups needs to be resolved.

Strait of Georgia Chum

The Strait of Georgia chum fisheries consists of terminal opportunities for chums returning to their spawning streams. Many of the potential terminal fishing areas have enhancement facilities / and or spawning channels associated with the rivers. Terminal fishery strategy consists of monitoring and assessing stocks (escapement and returning abundances) with the objective of insuring adequate escapement and providing harvest opportunities where possible. Assessing stocks may include test fisheries, commercial assessment fisheries, escapement enumeration, and over flights, In some areas where stocks receive considerable enhancement (Qualicum) or where stocks have above average productivity, limited fishing may occur prior to major escapement occurring.

Qualicum having three major enhancement facilities (Big Qualicum, Little Qualicum and Puntledge hatcheries) has a specific harvest strategy, implemented since 1981. This strategy consists of limited early harvesting prior to escapement occurring. The early harvest total allowable catch (TAC) ceiling is 65% of the total surplus. This allows for a buffer to safeguard against forecast / stock abundance error. This buffer is limited to 100k, at which the additional surplus after 100k buffer can be considered early harvest TAC. The harvesting of early (brighter) fish includes conservation considerations to minimizing other species bycatch and minimizing the harvest of non-target passing chum

stocks. Note: since 2002 Puntledge River stock returns have been above average which has resulted in terminal fisheries focusing on this slightly earlier timed stock.

Other factors affecting the scheduling of commercial fisheries include coast-wide allocation, fishery impacts, gear interaction, effort and weather.

Recreational marine catches for chum salmon are generally small. Occasionally recreational in-river fisheries occur where surpluses or target escapements will be met. These fisheries are almost exclusively where enhancement facilities are present.

Fisheries

The terminal Strait of Georgia fisheries are managed on a stock by stock basis. Each area receives individual assessments according to the characteristics of the potential harvesting. Assessment and harvesting may begin as early as October and continue to as late as December. Information is preliminary as escapements continue to be compiled.

First Nations

Chum were harvested by First Nation for both ESSR and FSC opportunities. Catch reports are still being compiled as some fishing is occurring during the preparation of this report. The total chum reported to date is approximately 9,000 to 11,000 pieces.

Recreational

Recreational creel survey extends to the marine area Discovery Passage, (outside of Campbell River). This area was originally an extension of the Strait of Georgia creel survey and is traditionally reported with the Strait of Georgia catch. The total catch estimated by the creel survey and reported, as Strait of Georgia catch retained is 10,192. The majority of chum catch occurs in the Discovery Passage area.

Commercial

Area 14 – Qualicum. Gillnet openings occurred from October 11-14, 17-19, 24-30, November 2-9 for a total of 22 days. Gillnet catches totaled approximately 29,750. The troll fishery was open for 25 days on October 10-14, 17-21, 24-30, and November 2-9. Troll catches are estimated to total 360. A seine fishery occurred on October 31 and November 1 for a catch of 320. The Gulf Trollers association attempted to catch chum with two seine vessels

Area 16 – Jervis Inlet. No commercial fisheries occurred again in Jervis Inlet as stock levels appeared to be below target escapement. A one day troll test fishery occurred on October 31 in Lower Jervis Inlet (16-11) but there was no catch.

Area 17 – Nanaimo. Gillnet openings occurred from October 23-25, and October 30 to November 1. Gillnet catches totalled approximately 2,660. Troll fisheries were open on the same dates, but there was no effort or catch for these openings. No seine fisheries occurred.

Area 18 – Satellite Channel. There were no commercial openings due to low estimated escapement in the Cowichan River. Preliminary estimates are in the range of 45,000 to 60,000 with a target of 110,000.

Area 19 - There were no commercial openings due to low estimated escapement in the Goldstream River. Preliminary estimates are in the range of 3,000 to 5,000 with a target

of 15,000. A commercial communal licence was drafted for Saanich Tribes in contemplation of a small bite seine fishery in Saanich Inlet. However due low abundance the fishery could not proceed.

Stock Status

The returning chum stock to the Strait of Georgia for 2005 was forecasted to be average to above average. Fisheries for First Nations were anticipated and occurred in some terminal areas. Commercial fisheries occurred in Qualicum and Nanaimo. Recreational fisheries for chum were limited, due to concerns for other species. The 2001 brood year was average in escapement levels, and the survival was anticipated to be above average thus providing an average to above general forecast. Historically, chum returns have been highly variable.

Currently, returns have been slightly lower than expected. Several anticipated commercial fisheries did not occurred. Preliminary escapements are below average. Conditions for chum migration and spawning to date have been good.

West Coast Vancouver Island Chum

The West Coast of Vancouver Island (WCVI) chum fisheries consists of terminal opportunities for chums returning to their spawning streams. The main potential terminal fishing (Nitinat and Nootka) areas have enhancement facilities associated with the rivers. Terminal fishery strategy consists of monitoring and assessing stocks (escapement and returning abundances) with the objective of insuring adequate escapement and providing harvest opportunities where possible. Assessing stocks may include test fisheries, commercial assessment fisheries, escapement enumeration, and over flights. In outer Nootka Sound where there is a mixture of wild and enhanced stocks, a harvest rate fishery occurs. The harvest rate target is 20 - 30% of the wild stock. In addition fisheries may occur on terminal surpluses adjacent to the enhanced systems in Tlupana Inlet. In Nitinat the harvest is dependent on forecasted and in-season assessed returning stocks. This year two additional commercial gillnet assessment fisheries have occurred. These fisheries were effort restricted and occurred in approach areas to Barkley Sound and Esperanza.

Another objective is to minimize the by catch of concerned species, such as chinook, coho, and steelhead. Since 1995, the bycatch concerns have been addressed by delayed opening dates, reduced fishing area, increased use of weed lines, and selective fishing techniques. In 2005, concerns for bycatch of steelhead were again an important factor in determination of the fishing opportunities in the Nitinat area. In Nootka Sound coho retention incidental to the chum gill net fishery was permitted due to recent year favourable returns.

First Nations fisheries under section 35 remain a priority and occur in terminal areas based on maximum harvest levels. Additional fisheries may occur under ESSR policy guidelines, where surplus chum occur, in the past primarily in Nitinat Lake.

Recreational marine catches for chum salmon are generally small. Occasionally recreational in-river fisheries may occur where surpluses or target escapements have been met, particularly in the Nitinat and Conuma rivers.

Fisheries

The primary fishery which harvests chum is the commercial sector. Of the commercial sector gillnet and seine is the main harvesters in Nitinat and gillnet in Nootka. First Nation fisheries (section 35) remain a priority and generally occur in terminal areas (i.e. Nitinat Lake). Effort and catch are usually relatively low. In river recreational fisheries are not wide spread, but have recently occurred annually in terminal area rivers (i.e. Nitinat River). Other recreational marine fisheries are generally low in effort for chum. In recent years a scientific license has been issued in Nitinat Lake to provide information on returning chum stocks.

First Nations

The FSC fishery in Nitinat Lake operated in conjunction with a scientific license and an ESSR fisheries. 424 chums were taken for FSC. A scientific licence was issued to the Ditidaht to harvest up to 2,000 chinook, 2,000 coho and 10,000 chums in 2005. The purposes of these activities is to provide information on migration timing, abundance and to collect unbiased biological samples. The Ditidaht First Nation ESSR fishery harvested 33,314 chum in Nitinat Lake and approximately 100,000 chums from the Nitinat River hatchery.

Recreational

WCVI Chum were open all year with a limit of four (4) per day. There is a minimum size limit of >30cm. WCVI recreational anglers kept 154 chum in the 2005 WCVI sport fishery.

Commercial

Nitinat

The gill net fishery at Nitinat opened on October 01. The gill net fishery was open every day except October 4, 16 and 17 until October 30. Fleet sized varied between 31 and 46 vessels until October 22. From October 23 until October 30 the fleet size ranged between 2 and 6 vessels. Gill net fishing throughout the first 3 weeks of the fishery was very good. The daily vessel average catch through this period was approximately 400 chum. The total gill net catch is estimated to be 291,762.

Seines opened on October 16 and October 17. 60 vessels participated in this opening. The fishery reopened on October 21 with 46 vessels participating and remained open until October 29. By October 24 only 6 vessels were fishing. The total seine catch is estimated to be 371,163 chum

Nootka / Tlupana

Gill nets fished two day per week in Outer Nootka Sound commencing September 20 until October 26. The fleet size averaged 31 vessels throughout the fishery. There was one fishery opening in Tlupana on October 14. The total gill net catch is estimated to be 84,473

Barkley Sound and Esperanza Inlet Assessment Fisheries

Small assessment fisheries were held in Barkley Sound and Esperanza Inlet again in 2005 to assess he feasibility of harvesting low levels of chums from areas that have not been fished for many years. A limited number of boats (maximum 8 in Barkley and 5 in

Esperanza) were selected to fish 1 to 2 days, (some additional days were allowed in season in both areas),per week. Vessels fished in pre-determined zones on the first day with the remainder of the fleet free to fish in zones of their own selection. On the second or subsequent days all vessels were free to choose among the zones. Coho were allowed to be retained. One onboard monitor was in each area each week. These fisheries started on September 27 and continued until October 26.

The Barkley Sound catch totalled 12,274 chums and 201 coho while the Esperanza catch was 24,788 chum and 174 coho.

Stock Status

Nitinat total returns for 2005 were forecasted to be 1.3M chum. The main brood year production was 30 million eggs. The Nitinat area brood escapement was 301,000 spawners. Historical escapement have been variable, however, the returns are heavily subsidized by hatchery production. This years main brood year returns were expected to be good, as the escapement and production was above average. Gillnet test fishing commenced early October in Nitinat Lake and ending in early November. Seine test fishing in the marine areas commenced early October and ended late October. Early enumeration of chum for Nitinat River was 250k. Final escapement estimates is not yet available.

The total return to Nootka (Area 25) was forecasted at 235k. Nootka Sound stocks are augmented by the Conuma hatchery, which produce both chum and chinook. The approximate 20% harvest strategy which was initiated in the early 1990's is currently under review. Escapement to individual streams is highly variable. The long term escapement trend (since the mid 1950's) suggests the wild stocks are stable. The escapement trend for the enhanced area streams suggest a slight increase over a more recent hatchery period (1978). Test fishing by seine commenced in early October and continues until the end of October. This years escapement (2005), are currently still being compiled, but early indications suggest a low return.

Other returns to non-enhanced systems continued to be monitored. Early indications with several river systems in Area 23 and 24 currently show below average returns.

Table 25. Preliminary 1994 to 2004 Catches in Canadian Treaty Limit Fisheries.

Fisheries/Stocks	Species	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Stikine River	*Sockeye*	*85,890*	*84,886*	*58784*	*17,294*	*25,600*	27,468	38,055	43,803	65,559	74,281	53,467
(all gears)	*Coho*	*276*	*275*	*190*	*82*	*233*	301	181	726	401	1,404	3,418
	Chinook-large	*18,997*	*3,857*	*1396*	*1,362*	*1,480*	3,086	2,916	2,164	4,483	2,471	1,646
	Chinook-jack	*2,177*	*2,574*	*1052*	*578*	*103*	628	1,264	423	286	421	860
Taku River	*Sockeye*	*21,932*	*19,860*	*32,730*	*31,053*	*47,660*	28,009	20,681	19,038	24,003	41,665	32,640
(commercial gillnet)	*Coho*	*6,860*	*5,954*	*3,168*	*3,082*	*2,568*	4,395	4,416	5,090	2,594	5,028	13,629
	Chinook-large	*7,534*	*2,074*	*1,894*	*1,561*	*1,458*	1,576	908	1,107	2,731	3,331	1,577
	Chinook-jack	*821*	*334*	*547*	*291*	*118*	87	257	227	84	144	298
*Areas 3 (1-4)**	*Pink*	*878,552*	*402,459*	*667,103*	*876,631*	*473,318*	*127,000*	2,162,280	61,000	329,000	987,000	2,613,000
(commercial net)												
Area 1	*Pink*	*39,430*	*27,751*	*98,347*	*41,418*	*175,000*	28,295	25,000	0	261,000	732,000	1,284,000
(commercial troll)												
*North Coast***	*Chinook*	*243,606*	*241,508*	*191,657*	*141,848*	*43,500*	32,048	70,701	144,650	145,568	26,900	119,100
(troll + sport)		*174,806+68,800*	*167,508+74,000*	*137357+54300*	*94748+47100*							
West Coast Vancouver	*Chinook*	*199,407*	*211,333*	*175,821*	*22,009*	*36,474*	37,200	31,100				
Island (troll + sport)		*143,614+55,793*	*168,837+42,496*	*151826+23995*	*128,798*	*54,770*	*63,400*	6,500	10,284	51,400	0	81,000
Fraser River (Canadian	*Sockeye*	*137,000*	*1,993,800*	*1,042,986*	*2,182,700*	*295,000*	953,000	54,000	1,295,000	8,737,000	1,019,000	903,000
commercial catch)	*Pink*	*338,000*	*0*	1149189	*0*	*579,000*		3,000	0	3,660,000	0	3,777,000
Fraser River Stocks	*Sockeye*	*0*	*192,200*	*244000*	*434,600*	*240,000*	494,000	41,000	707,000	1,578,000	257,000	415,000
(US commercial catch)	*Pink*	*0*	*0*	*773000*	*0*	*427,000*		3,000	0	1,565,000	0	1,919,000
West Coast Vancouver	*Coho*	*5,989*	*0*	*0*	*0*	*0*	0	0	0	0	761,000	1,345,000
Island (commercial troll)												
Johnstone Strait	*Chum*	*787,226*	*1,089,100*	*1,026,029*	*700,000*	*236,000*	161,000	41,411	1,820,000	104,593	101,971	269,000
*(clockwork catch)****												

E 2004 CATCHES ARE PRELIMINARY AND ARE BASED ON IN-SEASON HAILS, ON-THE-GROUNDS COUNTS, DOCKSIDE TALLIES AND ABORIGINAL LANDING SLIPS, FISH SLIP DATA, CREEL SURVEYS AND LOGBOOKS.

* AREA 5-11 CATCHES INCLUDED PRIOR TO 1995 AND EXCLUDED FROM 1995 TO 1998 INCLUSIVE, NOT PART OF 1999 ANNEX IV PROVISIONS.

** NORTH COAST CATCH EXCLUDES TERMINAL EXCLUSION CATCHES OF 6,000 ('91), 6,100 ('92), 7,400 ('93), 6,400 ('94), 1,702 ('95), 16,000 ('96), 5,943 ('97), and 2,182 in 1998. NO TERMINAL EXCLUSION IN THE 1999 AGREEMENT - COVERED UNDER THE AABM ARRANGEMENT. CENTRAL COAST AREAS NOT PART OF 1999 ANNEX IV PROVISIONS.

*** CANADIAN CLOCKWORK CATCH INCLUDES COMMERCIAL, IFF AND TEST FISH CATCHES IN AREAS 11-13 FOR1991-94 INCLUSIVE, AND IN AREAS 12-13 FOR 1995 TO 2004 INCLUSIVE.

NOTE: BOLD LINE BETWEEN 1998 AND 1999 INDICATES THAT 1999 CATCHES ARE REPORTED ACCORDING TO FISHERIES/STOCKS UNDER THE 1999 ANNEX IV PROVISIONS.

C. 2005 POST-SEASON REPORT FOR UNITED STATES SALMON FISHERIES OF RELEVANCE TO THE PACIFIC SALMON COMMISSION

Northern Boundary Area Fisheries

District 104 Purse Seine Fishery

The June 30, 1999 revision of the Pacific Salmon Treaty (PST) Agreement calls for the implementation of abundance based management in the District 104 purse seine fishery. The agreement allows the District 104 purse seine fishery to harvest 2.45 percent of the Annual Allowable Harvest (AAH) of Nass and Skeena sockeye prior to statistical week 31. The AAH is calculated as the total run of Nass and Skeena sockeye salmon minus either the escapement requirement of 1.1 million (200,000 Nass and 900,000 Skeena) or the actual inriver escapement, whichever is less.

The District 104 purse seine fishery opens the first Sunday in July; in 2005 the initial opening was July 3 (Week 28). The pre-Week 31 fishing plan for District 104 was based on the preseason Canadian DFO forecast returns of approximately 860,000 Nass and 1.53 million Skeena sockeye salmon.

In the 2005 treaty period 35,690 sockeye were harvested in: 1) a 12-hour and a 10-hour opening in Week 28; 2) a 12-hour and a 10-hour opening in Week 29; and 3) four 6 -hour openings in Week 30 (Table 1). The number of purse seine vessels fishing ranged from 8 to 22 in individual openings during the period covered by the treaty. In past years 60% to 80% of these sockeye have been of Nass and Skeena origin. Thus, we would anticipate that between 21,400 and 28,500 Nass and Skeena sockeye were harvested in the District 104 purse seine fishery during the treaty period. The final targeted number of Nass and Skeena sockeye, and the actual catch by stock, will not be available until catch, escapement, and stock composition estimates are finalized for the year.

Table 1. Catch and Effort in the Alaska District 104 purse seine fishery, 2005.

Week/Opening	Start/Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
28	7/3	290	5,307	7,000	40,555	8,614	15	12
28B	7/7	10	1,098	1,819	7,580	998	8	10
29	7/10	115	4,084	3,332	146,342	6,274	11	12
29B	7/14	53	4,415	1,952	95,384	4,074	12	10
30	7/17	58	6,271	1,046	155,540	4,643	12	6
30B	7/18	27	4,246	1,005	122,695	2,793	9	6
30C	7/21	166	4,441	1,520	220,709	3,272	17	6
30D	7/22	179	5,828	2,171	155,692	3,081	22	6
31	7/25	752	19,025	6,913	681,487	11,392	36	39
31B	7/30	508	17,176	1,903	361,450	5,745	27	15
32	7/31	380	16,612	1,987	325,958	4,240	25	15
32B	8/1	431	20,409	1,333	333,586	4,627	30	15
32C	8/2	412	15,558	10,655	408,068	10,986	35	15
32D	8/4	206	14,155	1,260	211,531	3,761	23	15
32E	8/5	299	14,941	1,015	257,991	5,265	25	15
32F	8/6	226	11,909	1,361	263,939	5,844	31	15
33	8/7	551	21,347	1,241	275,514	7,226	27	15
33B	8/9	132	9,462	643	166,708	2,023	21	15
33C	8/10	217	10,444	791	240,145	3,795	24	15
33D	8/11	224	6,344	469	85,661	1,407	14	15
33E	8/12	351	18,867	1,002	245,032	3,293	21	15
34	8/14	1,052	86,933	2,126	310,021	6,906	27	15
34B	8/15	911	58,501	2,052	281,711	5,205	33	15
34C	8/16	809	60,761	1,595	180,031	4,053	38	15
34D	8/17	651	59,224	2,014	280,622	6,355	45	15
34E	8/19	74	2,822	234	22,388	659	10	15
34F	8/20	17	6,214	560	41,798	1,410	17	15
35	8/21	0	21	15	3,034	126	1	15
35B	8/22	75	7,488	959	78,023	3,523	8	15
35C	8/25	36	7,951	876	76,284	2,996	9	39
Weeks 28-30		898	35,690	19,845	944,497	33,749	38	68
Weeks 31-35		8,314	486,164	41,004	5,130,982	100,837	82	378
Total Season		9,212	521,854	60,849	6,075,479	134,586	83	446

While other purse seine fisheries are not bound by the Treaty, the fleet moves freely between districts, so seining opportunities elsewhere can affect the catch and effort in District 104.

The average numbers of hours, boats, days, and boat-days fished pre-Week 31 in District 104 since the Pacific Salmon Treaty was signed in 1985 are down 55%, 52% and 80% respectively compared to the 1980-1984 period (Table 2). The pre-Week 31 Treaty-period sockeye harvest is also down 33% despite a 281% increase in the average sockeye catch-per-boat-day since 1984.

Table 2. Fishing opportunity, effort, and sockeye harvests prior to Week 31 in the District 104 purse seine fishery, 1980 to 2005.

Year	Hours Fished	Boats Fished	Fraction Days Fished (1d=15hrs)	Boat-Days Fished (Fraction Boats and Fraction Days)	Sockeye Harvest	Sockeye Catch Boat-Day
1980	207	244	13.8	2,877	266,273	93
1981	132	212	8.8	1,108	185,188	167
1982	117	255	7.8	1,435	213,150	149
1983	108	241	7.2	1,211	170,306	141
1984	132	174	8.8	805	103,319	128
1985	84	141	5.6	502	100,590	200
1986	108	194	7.2	968	91,320	94
1987	90	134	6.0	457	72,385	158
1988	108	210	7.2	994	248,789	250
1989	84	135	5.6	438	157,566	360
1990	42	171	2.8	276	169,943	615
1991	41	134	2.7	243	98,583	406
1992	29	108	1.9	142	79,643	561
1993	45	171	3.0	343	163,189	476
1994	55	84	3.7	202	158,524	783
1995	58	109	3.9	218	71,376	328
1996	31	113	2.1	128	215,144	1,684
1997	56	159	3.7	409	572,942	1,402
1998	32	78	2.1	89	17,394	196
1999	30	38	2.0	44	7,664	174
2000	81	66	5.4	192	48,969	255
2001	50	95	3.3	182	203,090	1,115
2002	72	44	4.8	124	26,554	215
2003	52	40	3.5	97	84,742	875
2004	107	24	7.1	102	30,758	302
2005	68	38	4.5	93	35,690	382
Avg. 80-84	139	225	9	1,487	187,647	135
Avg. 85-05	63	109	4	297	126,422	516
% Change	-55%	-52%	-55%	-80%	-33%	281%

In the 2005 season the District 104 purse seine fishery harvested 6,075,479 pink salmon, 521,854 sockeye, 60,849 coho, 134,586 chum, and 9,212 Chinook salmon. During the 2005 season, the total number of purse seine vessels fishing in District 104 rose to 83, up from a low of 60 in 2004, this remains less than half the 1985-2004 average of 201. In 2005, seasonal sockeye catches were 89%, coho catches were 42% pink catches were 60%, and chum catches were 36% of their respective 1985-2004 averages (Figures 1-5).

Figure 1. District 104 Purse Seine Boats Fishing

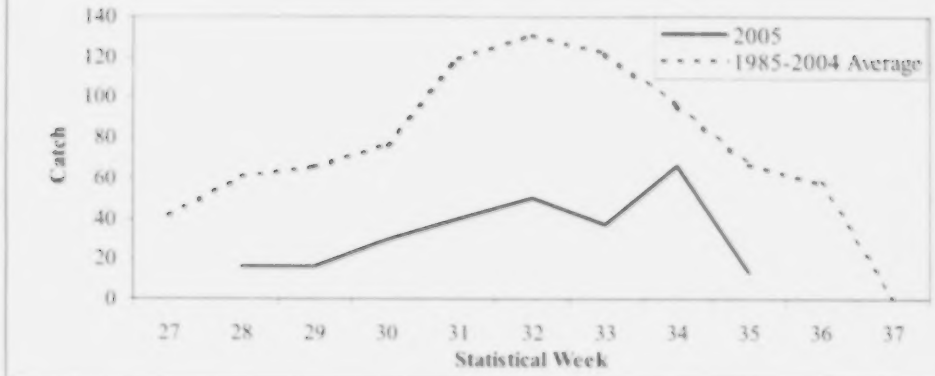


Figure 2. District 104 Purse Seine Sockeye Catch

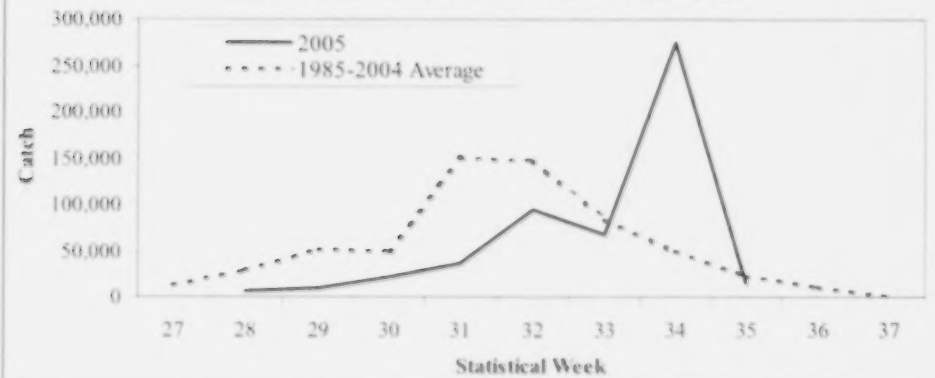
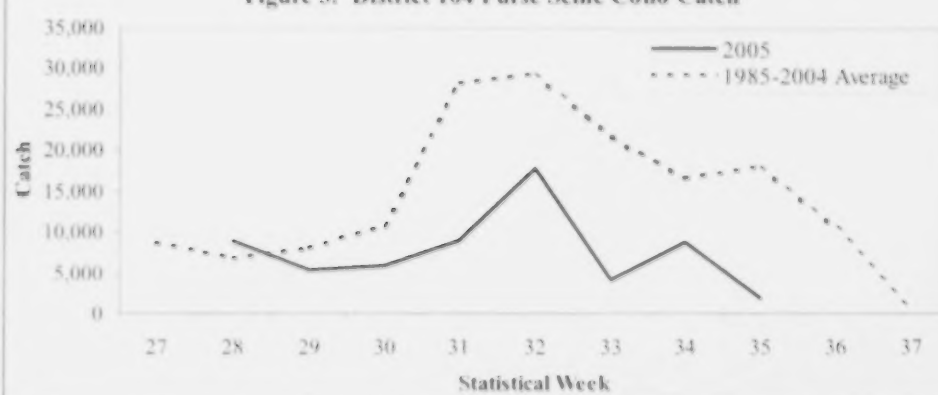
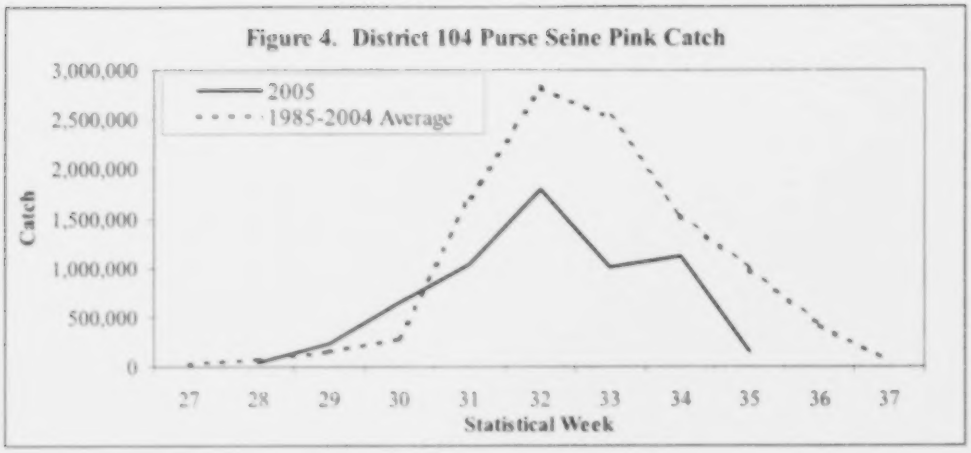
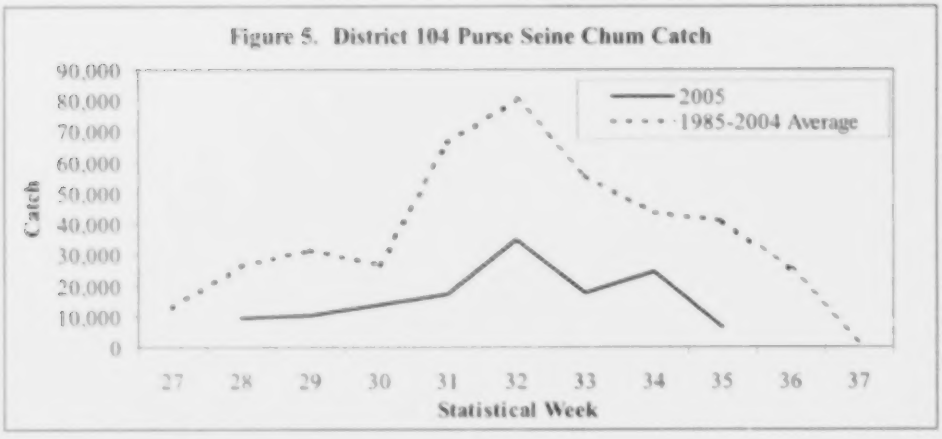


Figure 3. District 104 Purse Seine Coho Catch





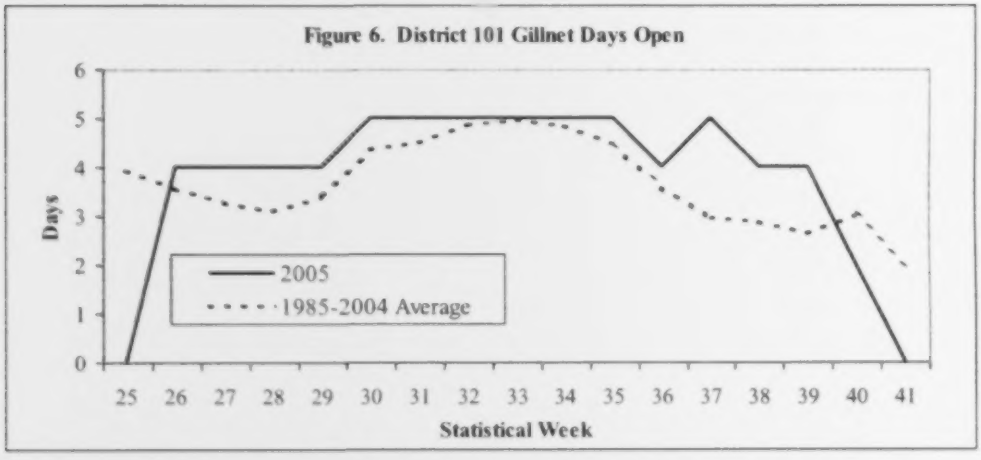


District 101 Drift Gillnet Fishery

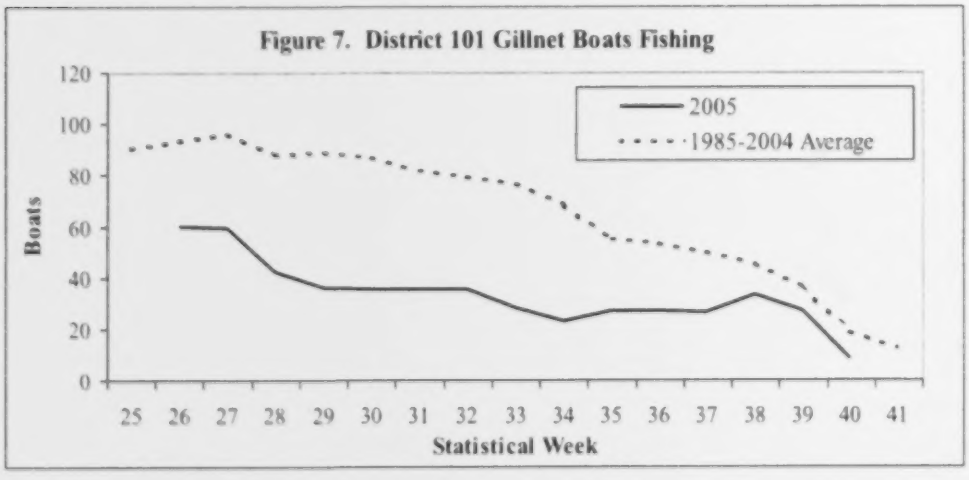
The June 30, 1999 PST agreement calls for abundance based management of the District 101 (Tree Point) drift gillnet fishery. The agreement specifies a harvest of 13.8 percent of the AAH of the Nass River sockeye run. For the 2005 season, DFO forecast a total return of 860,000 Nass River sockeye salmon. The AAH is calculated as the total run of Nass sockeye salmon minus either the escapement requirement of 200 thousand or the actual inriver escapement, whichever is less.

The District 101 drift gillnet fishery opens by regulation on the third Sunday in June. During the early weeks of the fishery, management is based on the run strength of Alaska wild stock chum and sockeye salmon and on the strength of the Nass River sockeye salmon. Beginning in the third week of July, when pink salmon stocks begin to enter the fishery in large numbers, management emphasis shifts by regulation to that species. By regulation, the District 101 Pink Salmon Management Plan sets gillnet fishing time in this district in relation to the District 101 purse seine fishing time when both fleets are concurrently harvesting the same pink salmon stocks.

The District 101 gillnet fishery was initially opened Sunday June 19 (Week 26). The length of weekly openings were similar to the treaty period average (Figure 6).



The number of gillnet boats fishing during weekly openings of the District 101 gillnet fishery remained below the 1985-2004 average (Figure 7).



The 2005 weekly catch of sockeye salmon in the District 101 gillnet fishery was below the treaty period (1985-2004) average (Figure 8). The cumulative sockeye harvest prior to the initiation of the Pink Salmon Management Plan in Week 30 was 51,967 fish, or about 65% of the season's total sockeye harvest. Weekly catches of coho and chum salmon in 2005 were close to the treaty period averages (Figures 9-10). While the total catch of pink salmon was about average, the peak catch occurred relatively early in the season (Figure 11).

Figure 8. District 101 Gillnet Sockeye Catch

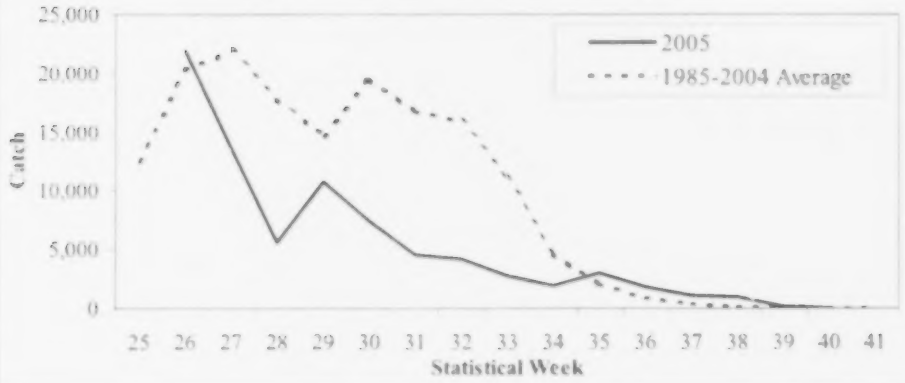


Figure 9. District 101 Gillnet Coho Catch

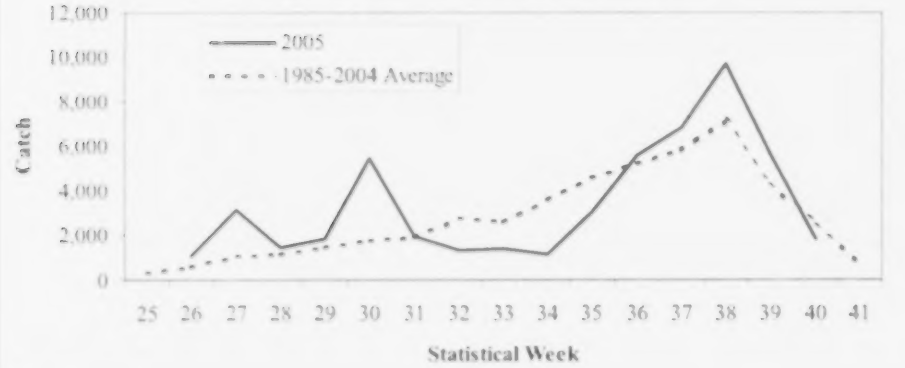
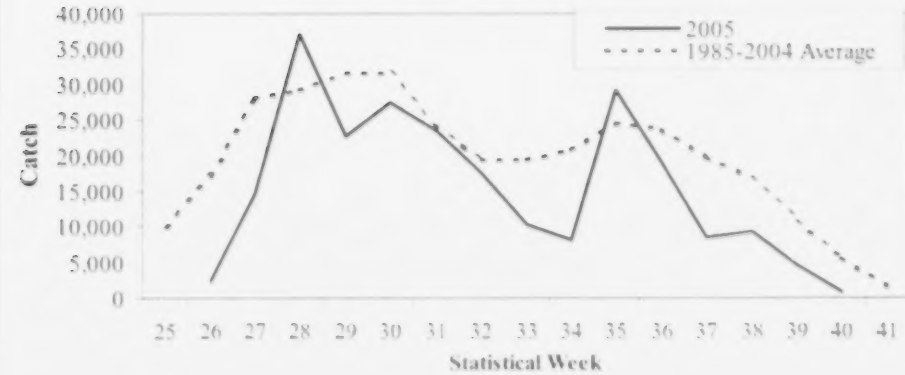


Figure 10. District 101 Gillnet Chum Catch



During the period (Weeks 30-36) when the Pink Salmon Management Plan was in effect catches of pink salmon in the District 101 gillnet fishery were below average. However, since the peak of the pink salmon catch occurred relatively early the total catch of pink salmon was about average.

In September the fishery was managed on the strength of fall chum and coho returns; fall chum catch was below average while fall coho catches were above average. The below average catches are more a reflection of the reduced effort at Tree Point in 2004 more than a resource problem.

A total of 79,725 sockeye salmon were harvested in the District 101 drift gillnet fishery in 2005 (Table 3). The sockeye harvest and number of boat-hours and boats fished were below the 1985-2005 average and the hours fished was above average. The number of boats fishing annually since the Treaty was signed has dropped from a high of 201 in 1986 to 70 in 2003. The final number of Nass River sockeye harvested at Tree Point will not be available until catch, escapement, and stock composition estimates are finalized for the 2005 season.

Table 3. Weekly catch and effort in the Alaska District 101 commercial drift gillnet fishery, 2005.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
26	19-Jun	624	21,933	1,044	1,222	2,397	60	96
27	26-Jun	429	13,682	3,138	78,842	14,525	59	96
28	3-Jul	148	5,641	1,462	72,113	37,054	42	96
29	10-Jul	77	10,711	1,797	76,390	22,587	36	96
30	17-Jul	76	7,414	5,431	104,085	27,374	35	120
31	24-Jul	39	4,601	1,936	88,332	23,380	35	120
32	31-Jul	25	4,148	1,331	52,656	17,481	35	120
33	7-Aug	10	2,764	1,395	28,089	10,268	28	120
34	14-Aug	6	1,937	1,125	25,904	8,125	23	120
35	21-Aug	3	3,044	3,010	21,156	29,195	27	120
36	28-Aug	3	1,784	5,588	6,293	18,870	27	96
37	4-Sep	1	1,047	6,816	946	8,476	26	120
38	11-Sep	2	904	9,702	391	9,243	33	96
39	18-Sep	1	102	5,605	3	4,518	27	96
40	25-Sep	3	13	1,800	2	690	8	48
Total		1,447	79,725	51,180	556,424	234,183	70	1,560

Table 4. Annual sockeye harvest in the Alaska District 101 drift gillnet fishery, 1985 to 2005, and comparison of sockeye harvest and effort (number of boats, hours, and boat-hours fished) between Statistical Weeks 26 and 35 when sockeye salmon are most abundant in this district.

	Annual	Catch and Effort between Weeks 26 and 35			
Year	Sockeye Harvest	Sockeye Harvest	Boats	Hours	Boat-Hours
1985	173,100	159,021	153	1,032	157,865
1986	145,699	143,286	198	960	190,044
1987	107,503	106,638	170	615	104,519
1988	116,115	115,888	187	756	141,338
1989	144,936	130,024	176	1,023	180,016
1990	85,691	78,131	150	840	125,969
1991	131,492	123,508	130	984	127,920
1992	244,649	243,878	118	1,080	127,416
1993	394,098	390,299	148	1,032	152,733
1994	100,377	98,725	142	984	139,700
1995	164,294	151,131	128	1,008	129,024
1996	212,403	175,569	129	1,104	142,408
1997	169,474	152,662	128	1,008	129,024
1998	160,506	159,307	124	1,044	129,454
1999	160,028	158,268	118	1,032	121,776
2000	94,651	94,399	95	912	86,640
2001	80,041	62,129	73	1,020	74,445
2002	120,353	106,360	68	1,008	68,544
2003	105,263	96,921	68	1,104	75,058
2004	142,357	141,395	61	1,104	67,332
Avg 1985-2004	152,652	144,377	128	982	123,561
2005	79,725	75,875	69	1,104	76,162

Escapements

The total pink salmon escapement index of 20.3 million for all of Southeast Alaska ranked 4th highest since 1960. This was very similar to the 2003 parent year index of 21.6 million, and slightly above the recent 10-year average of 18.5 million. Biological escapement goals were exceeded for all 3 sub-regions—particularly for the Northern Southeast Outside sub-region, where the total escapement index of 3.8 million was slightly more than double the upper range of the biological escapement goal (Table 5). Pink salmon escapement management targets were met or exceeded for all Districts in Southeast Alaska, and escapement indices were above the 10-year average for all Districts with the exception of District 101 (-15%), District 103 (-17%), District 106 (-17%), and District 111 (-17%). Pink salmon escapement management targets were met or exceeded for 42 of the 44 pink salmon stock groups with targets.

Table 5. Southeast Alaska pink salmon escapement indices, and biological escapement goals by sub-region (in millions).

Sub-region	2005 Pink Salmon Index	Biological Escapement Goal Lower Bound	Upper Bound
Southern Southeast	9.8	4.0	9.0
Northern Southeast Inside	6.6	2.5	5.5
Northern Southeast Outside	3.8	0.75	1.75
Total	20.3		

The Hugh Smith Lake adult sockeye escapement was just under 24,000, and exceeded the upper end of the recently established biological escapement goal range of 8,000 to 18,000 adult sockeye salmon. Stocked Hugh Smith Lake sockeye salmon comprised 57% of the escapement in 2005. The escapement of sockeye salmon into McDonald Lake was estimated to be 46,000 fish, based on the expanded foot survey index. This is the 4th year in the past 5 that the escapement has been below the escapement goal range of 65,000 to 85,000 sockeye salmon. Klawock Lake had a minimum weir count of 12,500+ sockeye salmon, however, a mark-recapture estimate has not been finalized. Two new sockeye salmon weir projects were conducted this summer. A weir at Karta River recorded 10,400 sockeye salmon, and a preliminary weir count of fewer than 2,000 sockeye salmon was recorded at Hetta Lake.

Nearly all measures that we have for chum salmon indicated that 2005 runs were below average for most of the region, and runs were even poor in some areas. Escapements of summer and fall run chum salmon appeared to be below average in 2005. The estimated escapement at Fish Creek, near Hyder, was only 16,000 (recent 10-year average = 26,000), and the Traitors Creek escapement was 11,000 (average = 18,000). The escapement index for Cholmondeley Sound fall chum salmon was a peak survey estimate of 15,000 – well below the 10-year average of 53,000.

Transboundary Area Fisheries

Stikine River Area Fisheries

The 2005 harvest in the District 106 commercial gillnet fishery included 1,572 Chinook, 110,191 sockeye, 114,410 coho, 461,187 pink, and 198,564 chum salmon (Table 6). District 106 catches of all species except Chinook and pink were below the 1995-2004 average. Lower catches can be partially attributed to low effort in the district. An estimated 27% of the coho salmon harvest was of Alaskan hatchery origin.

Table 6. Weekly salmon catch in the Alaskan District 106 commercial drift gillnet fisheries, 2005. Catches do not include Blind Slough terminal area harvests.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Permits	Days	Permit Days
25	12-Jun	338	1,056	1,185	1,133	50	15	3	45
26	19-Jun	402	16,552	8,842	16,573	1,152	52	4	208
27	26-Jun	329	13,210	10,379	36,014	21,381	75	4	300
28	3-Jul	122	12,215	8,156	36,457	30,378	77	3	231
29	10-Jul	132	14,930	8,872	115,267	50,805	95	3	285
30	17-Jul	65	12,978	5,345	113,787	32,448	88	3	264
31	24-Jul	67	5,164	1,942	32,010	9,926	53	2	106
32	31-Jul	14	5,053	1,888	30,900	8,885	55	2	110
33	7-Aug	11	9,754	2,842	24,696	9,088	52	4	208
34	14-Aug	5	9,319	4,341	19,969	6,952	54	4	216
35	21-Aug	2	5,954	7,276	23,958	7,312	49	4	196
36	28-Aug	3	2,449	9,166	9,224	7,720	54	3	162
37	4-Sep	1	541	5,418	533	2,633	51	3	153
38	11-Sep	11	712	13,044	617	4,278	51	2	102
39	18-Sep	16	252	13,631	48	3,172	57	3	171
40	25-Sep	8	48	10,244	1	2,063	45	3	135
41	2-Oct	0	4	1,869	0	321	24	3	72
Total 2005		1,526	110,191	114,440	461,187	198,564	152	53	2,963
1995-2004 Average		967	144,857	181,017	420,003	255,692	180	45	3,734
2005 as % of Average		158%	76%	63%	110%	78%	84%	118%	79%

In the 2005 District 108 fishery, 26,969 Chinook, 99,465 sockeye, 42,121 coho, 106,395 pink, and 150,109 chum salmon were harvested (Table 7). The catches for all species were well above average, with Chinook and chum harvests being the highest on record. Effort was well above average throughout the season. An estimated 21% of the coho catch was of Alaskan hatchery origin.

Table 7. Weekly salmon catch and effort in the Alaskan District 108 commercial drift gillnet fishery, 2005. The permit days are adjusted for boats that fished only the midweek openings.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Permits	Days	Permit Days
19	1-May	673	0	0	0	0	36	4	144
20	8-May	1,113	0	0	0	0	53	4	212
21	15-May	2,979	0	2	0	0	66	4	264
22	22-May	2,267	1	0	0	0	76	2	152
23	29-May	6,161	16	10	0	0	89	3	267
24	5-Jun	8,183	171	8	0	5	104	4	416
25	12-Jun	1,367	554	30	4	4	48	3	144
26	19-Jun	913	9,948	838	803	116	42	4	168
27	26-Jun	803	14,680	994	4,908	1,795	72	4	288
28	3-Jul	546	23,625	1,369	15,029	9,132	98	4	392
29	10-Jul	369	22,734	2,212	36,177	34,246	105	5	525
30	17-Jul	226	11,692	1,561	28,226	39,076	88	4	352
31	24-Jul	67	4,601	711	9,545	21,006	71	2	142
32	31-Jul	17	2,616	1,070	4,091	19,386	50	2	100
33	7-Aug	14	4,371	1,859	2,893	17,529	47	4	188
34	14-Aug	8	2,618	2,858	2,900	2,455	36	4	144
35	21-Aug	2	675	2,706	292	1,003	30	4	120
36	28-Aug	3	626	6,290	1,386	1,381	46	3	138
37	4-Sep	2	321	4,893	137	1,375	56	3	168
38	11-Sep	10	196	7,656	4	975	47	2	94
39	18-Sep	6	13	2,739	0	222	27	3	81
40	25-Sep	12	6	2,008	0	159	17	3	51
41	2-Oct	0	1	2,307	0	244	13	3	39
Total 2005		25,741	99,465	42,121	106,395	150,109	161	78	4,588
1995-2004 Average		1,692	54,478	18,960	35,062	52,453	122	46	1,655
2005 as % of Avg.		1521%	183%	222%	303%	286%	133%	171%	277%

Successful negotiations between the U.S. and Canada in February of 2005 resulted in the first commercial directed Stikine River Chinook drift gillnet fishery in almost 30 years. The fishery was limited to the waters in District 108 in order to target adult Stikine Chinook. One hundred thirteen vessels made landings of Chinook over the course of this six-week fishery from statistical week 19 through 24.

Harvest sharing of Stikine sockeye stocks is based on inseason abundance forecasts produced by the Stikine Management Model (SMM) (Table 8). The marine and inriver catches of planted Tuya fish were estimated from analysis of otoliths for thermal marks. Egg diameter analysis of inriver catches was used to estimate the relative abundances of Tahltan and Mainstem fish to Tuya fish in the Stikine River. The historical average weekly stock compositions were used to estimate the harvests of Tahltan and Mainstem

Stikine sockeye salmon stocks in marine harvests. Based on these analyses and ratios, the Sumner Strait fishery (subdistricts 106-41 & 42) harvested 25,000 Stikine sockeye salmon, 31% of the total sockeye harvest in those subdistricts. The Clarence Strait fishery (subdistrict 106-30) harvested an estimated 1,000 Stikine sockeye salmon, 4% of the harvest in that subdistrict. It is estimated that the District 108 fishery harvested 72,000 Stikine fish, 73% of the total sockeye harvest in that area. A total of 266 sockeye salmon were harvested in the Stikine subsistence fishery, well below the 600 sockeye cap. An estimated 98,000 Stikine sockeye salmon were harvested in commercial gillnet fisheries from both districts, representing 52% of the total sockeye catch. Of these Stikine sockeye salmon, an estimated 36,000 fish were produced by the joint U.S./Canada fry-planting projects on the Stikine River.

Preliminary postseason run reconstruction estimates (Table 9) differ from the inseason management model estimates (Table 8).

Table 8. Weekly forecasts of run size and total allowable catch for Stikine River sockeye salmon as determined inseason by the Stikine Management Model, 2005.

Stat.	Start	Forecast		TAC		Cumulative Catch[c]	
Week	Date	Run Size[a]	TAC	U.S.	Canada	U.S.	Canada[b]
25	12-Jun	477,120	421,096	210,548	210,548	464	0
26	19-Jun	477,120	421,096	210,548	210,548	4,603	832
27	26-Jun	477,120	421,096	210,548	210,548	24,197	6,822
28	3-Jul	174,037	116,068	58,034	58,034	43,838	18,409
29	10-Jul	189,491	132,443	66,221	66,221	70,674	32,351
30	17-Jul	222,687	166,052	83,026	83,026	86,772	54,182
31	24-Jul	246,207	189,536	94,768	94,768	93,645	67,617
32	31-Jul	237,385	180,695	90,348	90,348	95,961	75,888
33	7-Aug	253,791	197,174	98,587	98,587	98,348	79,408
34	14-Aug	274,896	218,308	109,154	109,154		

[a] U.S. forecasts were as follows: the preseason forecast was used for weeks 25, 26, and 27; the lower river commercial fishery CPUE data for the remainder of the sockeye season. (Canada independently generates forecasts that may use different criteria in some weeks.)

[b] Cumulative catch for Canada does not include approximately 100 Tuya ESSR fishery catch.

[c] Cumulative catch only includes catches through SW 33.

The estimated Stikine sockeye run was 258,000 fish (Table 9). The estimated spawning escapement of sockeye salmon in Tahltan Lake was 36,000 fish, not including 3,400 taken for broodstock and 400 for biological samples. This is well above the desired point goal of 24,000 spawners. The estimated spawning escapement to the Stikine River mainstem was approximately 32,000 fish, near the desired point goal of 30,000 fish.

Table 9. Preliminary post season Stikine River run reconstruction, 2005

	Tahltan	Tuya	Mainstem	Total	Planted Tahltan
Escapement	39,641	479	31,522	71,642	18,982
Biological Samples	400			400	116
ESSR Catch		85		85	
Broodstock	3,424			3,424	993
Natural Spawning	35,817		31,522	67,733	17,873
Excess		394			
Canadian Harvest					
Aboriginal Catch	4,602	44	438	5,084	2,108
Upper Commercial	529	5	71	605	243
Lower Commercial	60,721	578	18,653	79,952	28,695
Total	65,852	627	19,162	85,641	31,046
% Harvest	45%	60%	48%	46%	
Test Fishery Catch	1,102	5	889	1,996	645
Inriver Run	106,596	1,110	51,573	159,279	50,673
U.S. Harvest					
106-41	23,154	79	2,099	25,332	10,208
106-30	499	0	407	906	40
108	41,416	338	30,357	72,111	25,502
US subsistence	177	1	88	266	86
Total	65,246	418	32,951	98,615	35,836
% Harvest	45%	60%	48%	46%	
Test Fishery Catch	0	0	0	0	0
Total Run	171,841	1,528	84,524	257,894	86,509
Escapement Goal	24,000	0	30,000	54,000	
Terminal Excess					
Total TAC	147,841	1,528	54,524	203,894	
Total Harvest	131,098	1,045	52,113	184,256	
Canada TAC	73,921	764	27,262	101,947	
Actual Catch	65,852	627	19,162	85,641	
% of Total TAC	89%	82%	70%	84%	
U.S. TAC	73,921	764	27,262	101,947	
Actual Catch	65,246	418	32,951	98,615	
% of Total TAC	88%	55%	121%	97%	

Taku River Area Fisheries

The traditional District 111 commercial drift gillnet fishery salmon harvest totaled 23,300 Chinook, 87,300 sockeye, 20,725 coho, 181,500 pink, and 93,200 chum salmon (Table 10). Harvest of Chinook, coho, pink and chum salmon was 1,094%, 68%, 213% and 31% of the ten-year (1995-2004) averages, respectively. The harvest of sockeye salmon was 54% of average. Hatchery stocks contributed significantly to the harvest of both sockeye and chum salmon, and minor numbers to the harvest of other species.

Table 10. Weekly salmon harvest in the Alaskan District 111 traditional commercial drift gillnet fishery, 2005.

Statistical Week	Start Date	Chinook[a]	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days[b]
19	1-May	1,243	0	0	0	0	47	2	94
20	8-May	1,844	0	0	0	0	64	3	192
21	15-May	4,399	0	0	0	0	73	3	219
22	22-May	5,364	1	0	0	0	80	4	320
23	29-May	4,313	70	0	0	5	86	3	258
24	5-Jun	3,028	308	3	0	11	70	3	210
25	12-Jun	1,466	964	0	0	26	47	2	94
26	19-Jun	580	2,598	41	467	481	49	3	147
27	26-Jun	581	3,872	68	20,043	1,874	61	3	183
28	3-Jul	205	6,340	138	46,457	6,572	50	3	150
29	10-Jul	37	5,428	101	40,166	8,631	51	3	153
30	17-Jul	166	8,182	882	29,577	22,095	54	3	162
31	24-Jul	19	8,074	858	17,778	27,748	76	3	228
32	31-Jul	21	22,769	1,576	19,586	18,125	82	3	246
33	7-Aug	11	15,516	1,797	6,110	4,189	84	3	252
34	14-Aug	31	9,218	645	1,305	1,337	48	3	144
35	21-Aug	0	2,419	1,733	24	446	25	3	75
36	28-Aug	0	892	3,010	0	473	24	3	72
37	4-Sep	1	449	3,682	0	699	29	3	87
38	11-Sep	1	139	2,850	0	349	24	3	72
39	18-Sep	0	13	1,411	0	109	9	3	27
40	25-Sep	0	2	1,318	0	38	8	3	24
41	2-Oct	0	0	612	0	2	6	3	18
Total		23,310	87,254	20,725	181,513	93,210	159	68	3,426
1995-2004 Average		2,130	162,962	30,567	85,069	304,518	164	52	3,434
2005 as % of 10 Year Avg.		1,094%	54%	68%	213%	31%	97%	131%	100%

[a] Chinook salmon catch includes Harvest Code 411.

[b] The days open listed in this table reflect open fishing periods for all waters of District 11 except Speel Arm THA (111-33). Taku Inlet (111-32) was open for two days each week during weeks 30-32 and three days in week 33.

The Speel Arm Terminal Harvest Area (THA) was open for 27 days in SW33 through SW37 to target returning DIPAC Snettisham hatchery sockeye. The harvest from the Speel Arm THA contributed an additional 6 Chinook, 18,800 sockeye, 570 coho, 1,300

pink, and 500 chum salmon to the common property drift gillnet fishery in District 111 in 2005.

The total traditional drift gillnet Chinook salmon harvest in District 111 in 2005 was 23,300 fish. The total number of Chinook salmon caught in the new directed Chinook fishery between statistical weeks 19 and 28 totaled 23,000 fish. Of these, an estimated 19,900 were large fish, of which 19,000 fish were determined to be of Taku River origin. The Chinook salmon harvest after stat week 28 was 285 fish that were largely of hatchery origin. As estimated by coded wire tag (CWT) analysis, Alaska hatcheries contributed approximately 1,100 fish, or 4.5% of the total 2005 District 111 Chinook salmon harvest.

Approximately 99.5% of the Chinook salmon were harvested from Taku Inlet and 0.5% were harvested from Stephens Passage. The Taku River stock assessment program's preliminary estimate of the above-border run-size is approximately 48,000 large fish, 98% of the ten-year (1995-2004) average. The escapement goal range is from 30,000 to 55,000 large Chinook salmon.

The total Taku River sockeye salmon run was estimated at 196,000 fish (Table 11). Based on the escapement goal midpoint of 75,000 wild Taku River sockeye, the TAC was 121,000 fish. The U.S. TAC was 98,000 Taku River sockeye (82% of the TAC). It is estimated that the total U.S. harvest of Taku River sockeye salmon was 64,000 fish, 57% of the TAC. Sockeye salmon produced from a joint U.S./Canada fry-planting program at Tatsamenie Lake contributed an estimated 530 fish, or 0.6% of the total sockeye catch. Additionally, an estimated 28,000 Snettisham Hatchery sockeye salmon were harvested in common property traditional fisheries in District 111, of that total approximately 213,000 were harvested inside Port Snettisham.

The preliminary estimated above-border in-river wild Taku River sockeye run, based on mark-recapture estimates at Canyon Island, was 132,000 sockeye salmon. Subtracting the Canadian catch of 29,000 wild Taku River sockeye salmon the escapement of wild Taku River sockeye salmon was 103,000, 28,000 fish above the escapement goal of 75,000 fish. Preliminary 2005 Taku River sockeye escapements for enumerated systems were approximately: Trapper Lake 16,000; King Salmon Lake 1,000; Kuthai Lake 6,000; and Tatsamenie Lake 3,400. Escapements of sockeye salmon to Port Snettisham systems were fair, with 7,538 counted through a weir at Speel Lake and the Crescent Lake sonar reported a net upstream count of approximately 19,000 fish, which was not separable by species. It is known that all species of Pacific salmon do enter Crescent Lake, however sockeye is the predominant species.

Table 11. Preliminary Taku sockeye salmon run reconstruction, 2005. {Estimates do not include spawning escapements below the U.S./Canada border.

	Taku[a]
Estimated Taku In-river Run	131,611
Estimated U.S. Catch Taku fish	63,896
Total Run	195,507
Escapement Goal	75,000
TAC	120,507
U.S. TAC	98,264
U.S. harvest share (catch/total TAC)	0.57
Canada TAC	28,565
from .18 of total TAC	22,243
from .20 of inriver run >100,000	6,322
Estimated Canada catch	21,878
Canada harvest share (cat/total TAC)	0.18

[a] United States and Canada TAC computations based on harvest sharing arrangement described in Annex IV, Chapter 1, (3)(b)(1)(i).

Coho stocks harvested in District 111 include runs to the Taku River, Port Snettisham, Stephens Passage, and local Juneau area streams as well as Alaskan hatcheries. The coho harvest of 20,150 fish was 66% of the 10-year (1995-2004) average. Approximately 87% of the coho were harvested in Taku Inlet (above the ten-year average of 82%); 9% were harvested from Stephens Passage and 6% were harvested from inside Port Snettisham. Alaskan hatchery coho salmon contributed 410 fish or 2% of the District 111 harvest. Weekly coho harvests were below average during all weeks of the season except SW26 and SW40. The SW37 harvest of 3,700 fish was the peak week of coho harvest for the 2005 drift gillnet fishery. For most of the season, weekly estimates of Taku River coho abundance indicated a below average run size. The final inriver abundance estimate of coho escapement above Canyon Island of 102,000 was above average, approximately 106% of the 1995-2004 average. The cumulative Canadian coho harvest was approximately 8,000 fish. The coho escapement for the Taku River was estimated to be approximately 94,000 fish, surpassing the escapement goal of 35,000.

The District 111 pink salmon harvest of 181,500 fish was 214% of the ten-year (1995-2004) average. The escapement number to the Taku River was unknown; however, the number of pink salmon passing through the fish wheels at Canyon Island was used as an index of escapement. The 2003 (parent year) Canyon Island pink salmon fish wheel catch was 15,600. The 2005 Canyon Island pink salmon fish wheel catch of 15,800was 87% of the 1985-2003 odd-year average.

The catch total of 93,200 chum salmon was 31% of the ten-year (1995-2004) average, and was comprised almost entirely of summer run fish (96%). The summer chum run is considered to last through mid-August (week 33) and is comprised mostly of domestic hatchery fish, with small numbers of wild stock fish contributing. Chum salmon returning both to DIPAC hatcheries in Gastineau Channel and to the DIPAC remote

release site at Limestone Inlet contributed a major portion of the harvest, but quantitative contribution estimates are not available. Approximately 59% of the District 111 chum harvest was made in Taku Inlet, 38% in Stephens Passage, and 3% inside Port Snettisham. The harvest of 3,450 fall chum salmon (i.e. chum salmon caught after week 33) was 82% of the ten-year (1995-2004) average. Most of these chums are probably of wild Taku and Whiting River origin. Escapement numbers to the Taku River are unknown; however, the numbers of fall chums passing through the fish wheels at Canyon Island were used as an index of escapement. The index number for 2005, 237 fall chums is 44% of the 1985-2005 average.

Several other fisheries in the Juneau area harvested Taku River salmon stocks in 2005. Personal use permits were used to harvest an estimated 1,031 Taku River sockeye salmon In 2005, an estimated 4,450 Chinook salmon were harvested by sport fisheries in the Juneau area. A number of stocks are known to contribute to the Juneau area sport fishery, including those from the Taku, Chilkat, and King Salmon rivers, and local hatchery stocks, but the major contributor of large, wild mature fish was believed to be the Taku River. Of the Chinook harvested, 3,150 were estimated to be of Taku River origin based on coded wire tag analysis and maturity data.

Alsek River Area Fisheries

Although harvest sharing arrangements of Alsek salmon stocks between Canada and the U.S. have not been specified, Annex IV of the Pacific Salmon Treaty does call for a cooperative attempt to rebuild depressed Chinook and early-run sockeye stocks. Preseason expectations were for below average returns of sockeye and Chinook salmon. These expectations were based on parent-year escapements to the Klukshu River. The Alsek River commercial fishery opened on the first Sunday in June, statistical week 24 (June 5). The initial opening remained at 24 hours. The fishery was extended to 48 hours during statistical week 25 due to faulty catch reporting, and final CPUE for the week indicated the extension was not in order. Weekly openings remained at 24 hours for the next three weeks of the season. Fishing time was extended to 48 hours during the second week of July, and remained at 24 hours during the third week before again being extended to 48 hours during the fourth week of July. Effort in the Alsek River became minimal from this point on. The fishery targeted coho salmon after mid-August and fishing times remained at three days per week for the first six weeks of the coho season. With minimal effort and good coho CPUE, fishing time was opened to four days per week for the last two weeks of the season. No effort was recorded on the Alsek from August 14 through September 10.

The Dry Bay commercial set-gillnet fishery harvested 240 Chinook, 7,572 sockeye, and 1,196 coho salmon (Table 12). No pink or chum salmon were harvested. A test fishery was conducted on the Alsek River for Chinook salmon in 2005, and that fishery produced another 422 Chinook and 222 sockeye salmon, for a total harvest of 662 Chinook and 7,794 sockeye salmon. The Chinook salmon harvest was slightly above the 1994-2004 average, the sockeye salmon harvest was less than half the average and the lowest harvest since 1988, and the coho salmon harvest was also well below average. Very little effort was recorded during the coho season due to market conditions and the coho salmon harvest was the second lowest in the last 10 years. The number of fishing days was 43. The total effort expended in the fishery was 176 boat-days, which was also below average.

Table 12. Weekly catch and effort in the U.S. commercial fishery in the Alsek River, 2005.

Statistical Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Permits	Days	Permit Days
24	5-Jun	281	499	0	0	0	14	1	14
25	12-Jun	116	1,718	0	0	0	16	2	32
26	19-Jun	33	707	0	0	0	15	1	15
27	26-Jun	10	1,039	0	0	0	13	1	13
28	3-Jul	1	737	0	0	0	11	1	11
29	10-Jul	1	1,872	0	0	0	10	2	20
30	17-Jul	0	515	0	0	0	8	1	8
31	24-Jul	0	400	0	0	0	6	2	12
32-33	31-Jul	0	211	2	0	0	3	4	12
34-37	14-Aug	Not Fished						11	0
38-41	11-Sep	1	54	1,194	0	0	3	13	39
42	9-Oct	Not Fished						4	0
Total[a]		662	7,794	1,196	0	0	20	43	176
1995-2004 Average		655	19,878	5,877	12	488	24	69	395
2005 as % of Avg.		101%	39%	20%	0%	0%	83%	62%	45%

[a] Totals include fish taken in test fishery prior to statistical week 24.

Southeast Alaska Chinook Salmon Fishery

The 2005 preseason Chinook salmon target harvest level was determined using the abundance index of 2.05 generated with the CTC model calibration #0506. The corresponding target harvest of 416,400 was identified using Table 1 of Chapter 3. The preliminary estimate of the 2005 Chinook salmon harvest by all Southeast Alaska fisheries was 497,900 fish (Table 13). The treaty harvest (total minus the add-on and terminal exclusion harvest) was 386,700 fish, 7.1% below the target harvest of 416,400.

Table 13. Chinook all-gear harvests[1] in Southeast Alaska, 1987 to 2005, and deviation from the ceiling for years for which there were ceilings. Harvests are in thousands.

Year	Total Harvest	Add-on and Exclusion Harvest	Target Treaty Harvest	Treaty Harvest	Deviation Number	Deviation Percent
1987	282.4	17.1	263.0	265.3	2.3	0.9%
1988	279.3	22.5	263.0	256.8	-7.8	-3.0%
1989	291.0	21.5	263.0	269.5	6.5	2.5%
1990	366.9	45.9	302.0	321.0	19.0	6.3%
1991	359.5	61.5	273.0	298.0	25.0	9.2%
1992	258.8	36.8	227.4	222.0	-5.4	-2.4%
1993	304.1	32.9	263.0	271.2	8.2	3.1%
1994	264.4	29.2	240.0	235.2	-4.8	-2.0%
1995	235.7	58.8		176.9		
1996	236.3	81.3		155.0		
1997	343.0	56.3		286.7		
1998	270.6	27.4	260	243.2	-16.8	-6.5%
1999	251.0	52.2	184.2	198.8	14.6	7.9%
2000	263.3	76.8	178.5	186.5	8.0	4.5%
2001	265.7	78.8	250.3	186.9	-63.4	-25.3%
2002	426.5	69.4	371.9	357.1	-14.8	-4.0%
2003	439.4	59.3	439.6	380.1	-57.4	-13.1%
2004	506.2	77.4	418.3	428.8	10.5	2.5%
2005	497.9	111.2[2]	416.4	386.7	-29.7	-7.1%

[1] The actual target harvest and deviation cannot be calculated until the CTC completes the postseason calibration.

[2] The 2005 exclusion harvest is preliminary pending genetic stock composition estimates of the District 108 and 111 fisheries.

Troll Fishery

The winter troll fishery harvested 50,461 Chinook salmon from October 11, 2004 through April 9, 2005. A total of 5,474 fish were from Alaska hatcheries with 4,697 fish counting toward the Alaska hatchery add-on.

Spring fisheries were conducted prior to the July general summer opening. The spring fisheries are designed to increase the harvest of Alaskan hatchery-produced Chinook salmon by allowing trolling in small areas close to the hatchery where these fish concentrate. Terminal fisheries are a portion of the spring fisheries and occur directly in front of hatcheries or a remote release sites. While there is no ceiling on the number of Chinook salmon harvested in the spring fisheries, the take of Treaty Chinook salmon is limited according to the percentage of the Alaskan hatchery fish taken in the fishery. The harvests in 2005 were: 2,264 fish in the terminal fisheries, 54,163 fish in the general spring fisheries and a preliminary estimate of 4,274 in the Taku and Stikine exclusion fisheries. A total of 33% (19,964) of the Chinook salmon landed in these fisheries were from Alaska hatcheries of which 17,415 counted toward the Alaska hatchery add-on.

In the 2005 summer season there were three Chinook salmon retention periods: July 1-17, August 14-20 and September 15-20. The fishery harvested 226,853 Chinook salmon of which 10,321 fish (4.5%) were from Alaska hatcheries (8,856 counting toward the Alaska hatchery add-on).

The total harvest for the troll fishery in the 2005 accounting year was 338,407 Chinook salmon, with 303,055 counting as Treaty harvest.

Net Fisheries

Harvests of Chinook salmon in the net fisheries have been incidental to the harvest of other species and only constituted a small fraction (<1.0%) of the total net harvest of all species. That is still true for the purse seine fishery. As a result of the February, 2005 signing of the transboundary rivers Chinook harvest sharing agreement the drift gillnet fisheries in SEAK regulatory Districts 108 and 111 are allowed to target Chinook salmon returning to the Stikine and Taku Rivers. In 2005, the net fisheries harvested approximately 74,900 Chinook salmon of which approximately 20,700 counted as Treaty harvest. These numbers are very preliminary at this time due to the ongoing genetic stock composition analysis that has not yet been completed.

Taku River Area

In 2005, the District 111 drift gillnet fishery was open for the first time in 30 years under regulations established by the BOF in 2003 for a directed Chinook gillnet fishery during statistical weeks 19 to 25, to target returning Taku River Chinook salmon. Management actions for the directed Chinook fishery were limited to time restrictions as the open area, which includes the Taku Inlet area of Section 11-B north of the latitude of Cove Point and east of a line from Cove Point to Point Bishop, remained the same throughout the fishery. The US Allowed Catch (AC) was determined by a Pacific Salmon Commission bilaterally agreed on formula based, during the early season, on the pre-season Taku Chinook salmon run estimate, and revised in-season based on the in-season run projection estimates generated from the Canyon Island mark-recapture program. The AC applied only to large Taku origin Chinook salmon, fish over 28 inches in length (660mm MEF). The U.S harvest of the Taku Chinook salmon AC will not count towards the SEAK AABM allocation. The US allowed catch was shared between gillnet, troll and sport fisheries, with no set allocation for each user group. The new regulations allow gillnetting May 1, through the third Sunday in June. This season, the Taku drift gillnet directed Chinook salmon fishery occurred between SW19 and SW28, although management emphasis shifted to sockeye salmon beginning with stat week 26. The initial US AC was set at 22,850 large Chinook salmon, based on a pre-season terminal run forecast of 99,600 large Chinook salmon. In stat week 22 the first in-season projection of 101,116 was announced. Using the in-season projection, the management objective switched from the upper end of the escapement goal range (55,000) to the midpoint of the escapement goal range (42,500) for large Chinook salmon. Thus, the revised allowable catch for U.S. and Canada was 52,216 Chinook salmon, of which the U.S. allowed harvest was 31,940 fish, and the Canadian allowed harvest was 20,276 fish. Weekly management decisions were based on Canyon Island fish wheel catches, run timing, fishery performance, and available AC. The lack of recent historic data did not allow for comparison with past fisheries. The total Taku River origin Chinook salmon

harvest in District 111 drift gillnet fishery in 2005 was 19,000 fish of which 940 counted as treaty harvest.

Recreational Fisheries

The 2005 recreational fishery had an estimated preliminary harvest of 84,600 Chinook salmon of which 62,900 counted as Treaty harvest. The final total and Treaty harvest in the sport fishery for 2005 will be available in late fall of 2006.

Southeast Alaska Coho Salmon Fisheries

Attachment B of the June 30, 1999 U.S.-Canada Agreement relating to the Pacific Salmon Treaty specifies provisions for inseason conservation and information sharing for northern boundary coho salmon. In 2005, troll CPUE in Area 6 in the early weeks of the fishery averaged a record 74.1, far above the highest boundary area conservation trigger of 22. The mid-July projection of region-wide total commercial harvest was greater than the 1.12 million trigger for an early region-wide troll closure, specified in Alaska Board of Fisheries regulation and the PST conservation agreement.

The all-gear catch of coho salmon totaled 3.21 million fish of which 2.76 million (86%) were taken in commercial fisheries (Table 14). The troll catch of 2.04 million fish was the 5th largest on record and accounted for a record 73.9% of the commercial catch. Region-wide power troll weekly CPUE cumulated over the summer season was the second highest on record, lower than only 1994. Fishery performance in both the troll and drift gillnet fisheries was highest in southern fishing districts. Compared with 1980-2004, the Tree Point gillnet harvest was 129% of average and the harvest in central districts (106 and 108) was average, while the harvest in northern districts (111 and 115) was only 42% of average. Yakutat area runs were the weakest observed since 1990 while the harvest of 82,900 fish by the Yakutat set net fishery was the lowest harvest since 1983. Although fishing in outlying rivers continued to be restricted by market limitations and transportation costs, the Situk-Ahrnklin Lagoon fishery accounted for a catch of 50,900 fish, which was below the 1990-2004 average of 135,600 fish but higher than the 1960-1989 average of 27,800 fish. The very preliminary Southeast Alaska sport catch of 452,800 fish was the largest on record.

Wild production accounted for 2.33 million fish (84%) in the commercial catch compared with the 10-year (1995-2004) average of 2.09 million fish (80%). Of the estimated hatchery contribution of 443,600 fish, 99% originated from facilities in Southeast Alaska. Escapement goal ranges were met or exceeded for all indicator stocks with goals. Escapements were strongest in the Ketchikan area where the index of 14 surveyed streams was the highest on record since 1987 and the escapement to Hugh Smith Lake was 7th highest in 24 years. Exploitation rates for the four long-term indicator stocks averaged 53%, which was lower than the historical (1982-2004) average of 59%. Troll fishery exploitation rates for the four stocks averaged 38%, close to the historical average of 39%. The all-gear exploitation rate of 54% for Hugh Smith Lake was the fourth lowest estimate in 24 years and well below the 1982-2004 average of 67%. The 2005 region-wide summer troll coho fishery began on July 1 and ended on September 20, with a 4-day closure during August 10-13.

Table 14. Coho salmon harvest in Southeast Alaska in 2005 by gear type (preliminary).

Gear Type	Harvest
Troll	2,038,300
Purse seine	340,100
Drift Gillnet	297,900
Set Gillnet	82,900
Sport	452,800
Total	3,212,000

Preliminary 2005 Chinook and Coho Salmon Catches in Washington and Oregon Fisheries

The 2005 season was conducted under the renewed Annex IV arrangements of the Pacific Salmon Treaty. This report covers the fisheries that occur between Cape Falcon and the U.S./Canadian border. These fisheries are subject to the chinook ISBM obligations contained within the 1999 Agreement and the Southern Coho Management Plan adopted in 2002.

Descriptions of the preseason planning process, various regional fisheries, their general management constraints, and preliminary estimates of landed catch are listed in the following subsections. Tables 16 and 17 contrast preseason projections of catches with the preliminary estimates of landed catch for chinook and coho in the various 2005 fisheries of interest to the Pacific Salmon Commission. For historical perspective, catches for those fisheries since 1996 are also presented. Complete 2005 fishery catch reports (e.g., Puget Sound recreational catch estimates) and preliminary estimates of spawning escapements are not available at this time.

Preseason Planning

Southern U.S. regional management coordination occurs within the preseason Pacific Fisheries Management Council process commonly referred to as "North of Falcon". Within this process, participants evaluate the biological and social/economic consequences of options for the outside (ocean) and inside (Puget Sound and in-river) fisheries. The final product is a total fishery package that achieves both domestic and Pacific Salmon Treaty obligations as assessed by our domestic fishery regulation assessment models.

Chinook Salmon Management

Under the 1999 Pacific Salmon Treaty Agreement, Council fisheries are subject to the Individual Stock Based Management provisions of Annex IV, Chapter 3. These provisions require the adult equivalent harvest rate by all U.S. fisheries south of the U.S./Canada border to be reduced by 40% from the 1979-1982 base period for chinook stocks failing to achieve escapements at or above established escapement goals. Fishing levels and patterns were also constrained to meet provisions of the U.S.

Endangered Species Act for threatened and endangered Chinook salmon stocks originating from Puget Sound and the Columbia River. For the 2005 season, the stocks of concern were the Nooksack (early), Mid-Hood Canal, Puyallup, Snake River, and Coweeman chinook.

Coho Salmon Management

All U.S. natural spawning coho management units defined by the Southern Coho Management Plan were forecasted to be in moderate or abundant status, so exploitation rate caps for U.S. fisheries on U.S. management units did not represent a constraint in planning southern U.S. mix-stock fisheries. For the 2005 season, as with the 2003 and 2004 seasons, the low status of the Interior Fraser management unit represented the primary stock of concern with an exploitation rate cap of 10% for the southern U.S. fisheries. In addition, U.S. ocean fisheries also were constrained by domestic considerations for Oregon Coastal Natural and Columbia River Late coho.

North of Cape Falcon Ocean Fisheries

Management objectives for chinook fisheries in this area are to satisfy standards for ESA listed stocks, and to the extent possible, provide for viable ocean and in-river fisheries while protecting depressed Columbia River natural stocks and meeting hatchery fall chinook brood stock needs. Lower Columbia River and Bonneville Pool hatchery fall chinook have historically been the major stocks contributing to ocean fishery catches in the North of Cape Falcon area.

Quotas specified by species for treaty Indian, Non-Treaty commercial and recreational, define harvest opportunity for chinook and coho salmon. Quotas for chinook salmon in 2005 were a result of requirements to protect ESA-listed Snake River fall, Coweeman, and Mid-Hood Canal chinook. Quotas for coho salmon in 2005 were a result of requirements to constrain impacts on Interior Fraser, Oregon Coastal Natural, and Columbia River Late management units.

Treaty Troll Fishery

The treaty troll fishery was constrained by a chinook quota of 48,000 and a coho quota of 50,000. The season was comprised of a May/June chinook directed fishery and a July 1 through September 15 all species fishery. The season concluded with a catch of 41,848 chinook (87% of the quota) and 23,914 coho (48% of the quota).

Non-treaty Troll Fishery

Preseason non-treaty troll quota levels of 43,250 chinook and 23,200 coho (with healed ad-clip). The preliminary estimates of non-tribal harvest in the 2005 North of Falcon troll fishery are 45,142 chinook, slightly exceeding the quota, and 4,017 coho (17% of the quota). Some 27,837 chinook were harvested in the May 1-June 30 fishery and the remaining 17,305 chinook were harvested between July 7 and September 15. The coho catch represents harvest in a mark-selective fishery (healed adipose fin-clips) in the northern areas throughout the season; retention of unmarked coho was allowed during September in the southern part of the area. Total landings of coho were far lower than anticipated due to lower than expected marked fish availability and fishing effort directed at chinook salmon.

Recreational Fisheries

Preseason quotas for the recreational fishery were 43,250 chinook and 121,800 coho (with healed ad-clip). Total catches for the ocean recreational fisheries north of Cape Falcon were 39,951 chinook (92% of the coastwide quota) and 61,685 coho (51% of the coastwide quota). A description of the resulting season structure and catches by management area follows:

Columbia Ocean Area (including Oregon)

Ocean Area 1 (Columbia Ocean Area) opened for recreational all-species salmon fishing on Sunday, July 3 with a quota of 60,900 coho and a pre-season guideline of 8,200 chinook. The fishery closed on its automatic closure date, September 30. The catch estimates for Area 1 through September 30 are 13,196 chinook and 38,730 coho (64% of the quota). The chinook minimum size limit was 24 inches, with sub-area closures in the Columbia Control Zone and a closure between Cape Falcon and Tillamook Head beginning August 1.
Westport

Ocean Area 2 (Westport) opened for all-species recreational salmon fishing on Sunday, June 26 with a quota of 45,066 coho and a pre-season guideline of 28,750 chinook. The chinook minimum size limit was 24 inches. Grays Harbor Control Zone was closed beginning August 16. The non-selective coho fishery was closed after September . The catch estimates for Area 2 are 22,396 chinook and 10,504 coho (23% of the quota).

La Push

Ocean Area 3 (La Push) opened for all-species recreational salmon fishing on Tuesday, July 1 with a quota of 3,067 coho and a pre-season guideline of 1,900 chinook. The fishery closed on its automatic closure date, September 18, and reopened September 24 through October 9 in the area inside three miles of the shore around the mouth of the Quillayute River. The catch estimates for Area 3 through October are 1,623 chinook and 2,285 coho (74% of the quota). The chinook minimum size limit was 24 inches.

Neah Bay

Ocean Area 4 (Neah Bay) opened for all-species recreational salmon fishing on Tuesday, July 1 with a quota of 12,667 coho and a pre-season guideline of 4,300 chinook. The fishery closed on its automatic closure date, September 18. The catch estimates for Area 4 are 2,677 chinook and 10,119 coho (80% of the quota). The chinook minimum size limit was 24 inches.

Washington Coastal Fisheries

North Washington Coastal Rivers

Net and sport fisheries directed at salmon in this region were implemented based upon pre-season, tribal-state agreements and subject to in-season adjustment. The north coastal rivers net harvest (all by tribal fisheries) includes catch for the Waatch, Sooes, Quillayute, Hoh, Queets, Quinault, Moclips, and Copalis rivers. The 2005 commercial net fisheries in north coastal rivers have harvested an estimated 12,071

chinook and 60,162 coho through October 31. Recreational fishery harvest estimates are unavailable at this time.

Grays Harbor

Net and sport fisheries directed at salmon in Grays Harbor are implemented based upon pre-season, tribal-state agreements and subject to in-season adjustment. Harvest for Grays Harbor includes catch from both the Humptulips and Chehalis rivers through October 31. The 2005 tribal net fisheries have harvested an estimated 2,258 chinook salmon and 22,419 coho salmon. Non-Indian commercial fisheries have harvested 200 chinook salmon and 3,100 coho salmon. Recreational fishery harvest estimates are unavailable at this time.

Columbia River Fisheries

Treaty-Indian and non-Indian commercial and sport fisheries for chinook and coho in 2005 occurred during the winter/spring (February-June 15), summer (June16-July) and fall (August-October) periods. All fisheries were constrained by impacts on ESA-listed stocks. Winter/spring fisheries were primarily constrained by impacts on ESA-listed upper Columbia River, Snake River spring/summer chinook and wild winter steelhead. Summer fisheries were constrained by impacts to ESA-listed Snake River sockeye and wild Snake River steelhead. Fall fisheries were constrained by impacts to ESA-listed wild Snake River and Coweeman fall chinook.

Winter-Spring Fisheries

Non-Indian Commercial

The non-Indian winter commercial fishery was conducted as a selective fishery and occurred during March for a total of 9 days, which resulted in a total of 5,364 adipose fin-clipped chinook harvested.

Recreational

The 2005 mainstem recreational fishery operated under selective fishery regulations. Over 118,621 angler trips resulted in 11,315 fin-clipped chinook being landed. The fishery opened February 1 and remained opened through April 20. The fishery re-opened June 4 to allow for additional harvest opportunity during the remainder of the spring season (June 15).

Treaty Indian

The treaty Indian fishery caught 6,164 spring chinook for ceremonial and subsistence purposes. No commercial fishing periods were adopted in 2005.

Summer-Fall Fisheries

Non-Indian Commercial

A summer season fishery occurred in 2005. Fisheries were conducted once weekly between June 23 and July 25 for a total of 6 days, which resulted in 2,787 chinook being harvested. The fishery was non-selective and the first full- season fishery in decades.

Recreational

The summer season below Bonneville Dam began June 16 and concluded July 31. An estimated 45,000 angler trips resulted in the harvest of 2,300 chinook.

Treaty Indian

Treaty Indian summer season fisheries harvested 7,642 chinook including commercial, ceremonial and subsistence catches.

Fall Fisheries

Non-Indian Commercial

Early fall mainstem fisheries consisted of chinook salmon seasons that occurred during the month of August. Total chinook catch was 11,430 fish.

Late fall mainstem fisheries were initiated on September 19 and completed on October 29 and included general salmon seasons plus coho and chinook target seasons. Open areas included most or all of Zones 1-5 with certain closed areas adopted to protect ESA listed chinook, coho, and chum. Preliminary estimates of landings for the fall season of the non-Indian commercial fishery were 32,368 coho and 16,106 chinook.

Recreational

The Buoy 10 fishery (from the mouth upstream to the Tongue Point/Rocky Point line) opened August, 1 for chinook, adipose fin-clipped coho, and adipose fin-clipped steelhead. For the season a total of 54,000 angler trips resulted in 9,200 chinook and 6,900 coho being retained.

The mainstem Columbia River (from the Tongue Point/Rocky Point line upstream to H 39.5 Bridge at Pasco) opened for fall chinook and coho on August 1. Non-adipose fin-clipped coho were released downstream from Bonneville Dam. For this season a total of 19,170 chinook were landed. In the lower Columbia River (downstream of Bonneville Dam) 75,000 angler trips resulted in 18,200 of those chinook landed. The fishery closed September 17 for a short period and reopened Oct 4 and will remain open through December.

Treaty Indian

The Treaty Indian fall commercial fishery consisted of six weekly fishing periods from August 22 to September 30. Preliminary catch data indicate 115,091 fall chinook were harvested, including commercial, ceremonial and subsistence catches.

Puget Sound Fisheries

Puget Sound marine fisheries of interest to the Pacific Salmon Commission in 2005 were regulated to meet conservation and allocation objectives for chinook, coho, chum and sockeye salmon stocks, per tribal-state agreement. For Puget Sound chinook listed under the ESA, fisheries were managed according to the state and tribal joint resource management plan, the Puget Sound Chinook Harvest Management Plan. This management plan defines limits to total exploitation rates for natural stocks and was determined by the National Marine Fisheries Service to be consistent with requirements specified under the ESA 4(d) Rule.

Release requirements were applied to many recreational and commercial fisheries for chinook, coho and chum salmon, the latter to protect ESA-listed summer chum.

For the 2005 season stocks of concern were Interior Fraser coho and Nooksack (early), Mid-Hood Canal, and Puyallup chinook.

Strait of Juan de Fuca Recreational

Recreational fishing regulations allowed retention of chinook or coho with healed adclips beginning July 1 in the Strait of Juan de Fuca (Areas 5 & 6). The chinook selective fishery was regulated by a catch quota of 3,500 landed chinook, or a maximum season length of 41 days. Additional sub-areas were also closed, as with fishery in 2003 and 2004, with the intention of providing additional protection of local chinook stocks. The chinook selective fishery was closed after August 10 and the fishery continued through September 30 with chinook non-retention. Areas 5 and 6 were also open to chinook retention (non-selective) from February 14 through April 10 and from November 1 through November 30 with a 2 fish daily limit, 1 chinook.

Recreational catch was estimated by creel survey and totaled 2,000 chinook and 26,200 coho for the entire three month period. Catch record card estimates for salmon taken at times other than noted above are not yet available.

Strait of Juan de Fuca Net

Preliminary estimates of the 2005 catch in Strait of Juan de Fuca tribal net fisheries are 144 chinook and 1,320 coho salmon. These chinook and coho catches were less than the preseason expectations of 1,100 chinook and 15,300 coho.

Strait of Juan de Fuca Treaty Troll (Area 4B, 5, and 6C)

The preliminary estimates of the 2005 Strait of Juan de Fuca treaty troll fishery are 1,069 chinook and 131 coho through October 31. The tribal catch estimates from this area do not include catches from Area 4B during the May-September PFMC management period, which have been included in the North of Cape Falcon troll summary. This fishery operated under a harvest guideline for chinook, with a 500 fish guideline for the summer period and a 8,500 guideline for the winter period.

San Juan Islands Net (Area 7 and 7A)

Preliminary estimates of the 2005 catch in San Juan Island net fishery directed at sockeye or chum salmon totaled 200 chinook and 600 coho salmon for the non-Indian fishery, compared with pre-season expected landings of 500 chinook and 4,600 coho. Tribal fishery landings from this area totaled 6,500 chinook and 6,000 coho compared with pre-season expected landings of 3,000 chinook and 10,100 coho.

San Juan Islands Recreational

The southern and southeastern (Rosario Strait) portions of this catch area were again closed in 2005 to protect migrating, mature Puget Sound chinook salmon. The remaining area was opened for retention of chinook and coho salmon from July 1 to September 30. Release of unmarked coho salmon was required for the months of August and September. The month of October was opened for the entire area with release of chinook salmon required. Chinook retention also was allowed in the entire area from February 1 - March 31 and for the month of November; chinook retention was not allowed at other times. Recreational fishery harvest estimates are unavailable at this time. Additional subarea closures are described in the Washington State Sport Fishing Rules Pamphlet. Catch estimates for this area are not available at this time.

Inside Puget Sound (Areas 8-13) Recreational

Catch and angler effort estimates for these areas are not available at this time.

Puget Sound Marine Net (Areas 8-13)

To achieve conservation objectives for Puget Sound chinook and coho, very limited commercial fishing opportunities directed at abundant returns of hatchery chinook and both hatchery and natural returns of coho were planned for 2005.

Tribal net fishery harvests in Puget Sound marine areas 8-13 totaled 44,700 chinook and 168,000 coho, compared to pre-season expected catches of 21,600 chinook and 170,000 coho. Landings for non-Indian fisheries totaled 10 chinook and 8,500 coho compared to pre-season expected catches of 700 chinook and 29,400 coho.

Tribal and non-tribal net fishery harvests in Puget Sound marine areas 8-13, not including in-river fisheries, totaled 37,800 chinook compared to the preseason expectation of 16,100. Coho catches totaled 223,000 compared to a preseason expectation of approximately 142,800. Additional tribal net harvest of coho and chinook occurred in river fisheries.

Puget Sound Terminal Fisheries

Tribal net and sport fisheries directed at salmon in this region were implemented based upon preseason, tribal-state agreements and subject to in-season adjustment. The Puget Sound rivers net harvest (all by tribal fisheries) includes catch from river systems in the Strait of Juan de Fuca, Hood Canal , and Puget Sound. The 2005 tribal commercial net fisheries in Puget Sound rivers have harvested an estimated 19,600 chinook and 100,700 coho through October 31. Estimates of 2005 recreational fishery harvest are unavailable at this time.

Table 15 Preliminary 2005 landed CHINOOK catches for Washington and Oregon fisheries of interest to the Pacific Salmon Commission (nearest 100). 1/ Note: Patterned cells denote years/areas where some type of mark-selective fishery occurred. Refer to footnote 1/ or details.

Fisheries	2005 Preseason 2/	2005 Preliminary Postseason	2004	2003	2002	2001	2000	1999	1998	1997	1996
Ocean Fisheries											
Troll (see text for quota information)											
Cape Flattery& Quillayute (Areas 3,4&4B) 3/	66,400	58,400	72,900	92,200	106,10	49,600	17,800	44,900	20,300	20,400	12,300
Columbia. R & Grays Harbor (Areas 1 & 2)	24,800	27,600	14,500	12,300	14,600	5,000	2,800	200	0	0	0
Sport (see text for quota information)											
Neah Bay (Area 4) 4/	4,300	2,700	5,510								
La Push (Area 3)	1,900	1,600	1,430	28,400	49,800	17,900	6,900	7,600	1,800	3,600	100
Grays Harbor (Area 2)	28,750	22,400	9,582								
Col. R. (Leadbetter Pt. to Cape Falcon)	8,200	13,200	6,562	8,100	10,800	7,700	2,300	3,300	400	500	100
Inside Fisheries											
Sport											
Juan de Fuca (Area 5&6) 5/	3,500	2,000	3,595	3,507							
San Juan Islands (Area 7)	3,800	na	na	3,319	31,400	47,700	23,900	28,700	26,100	58,500	70,700
Puget Sound Sport (Areas 8-13)	31,400	na	na	22,565							
Puget Sound Rivers	9,600	na	na	na	na	12,500	5,900	8,900	10,600	5,500	5,200
North WA Coastal Rivers	na	na	na	na	na	2,000	1,200	1,000	1,400	1,300	1,500
Grays Harbor (Areas 2A-2D)	na	na	na	na	na	3,400	1,300	2,000	3,000	3,000	5,700
Columbia River Sport 6/ - Spring	na	11,300	23,700	17,900	21,800	26,800	700	0	100	0	0
Columbia River Sport 6/ - Fall	na	28,400	37,600	41,000	54,900	31,000	18,100	29,800	20,500	25,700	18,000
Commercial											
North WA Coastal Rivers	na	12,100	20,200	11,400	13,300	8,700	5,300	8,300	9,400	6,600	9,700
Grays Harbor (Areas 2A-2D) 7/	na	2,500	3,500	1,100	200	6,500	4,400	3,100	4,500	9,800	8,600
Columbia River Net-Winter/Spring	na	11,500	20,900	21,800	60,400	60,800	10,400	3,900	4,400	10,200	3,700
Columbia River Net - Fall	na	142,600	178,200	198,000	169,40	128,600	47,000	82,900	61,100	71,400	78,100
Strait of Juan de Fuca (Areas 4B, 5 & 6C) Net & Troll	9,500	1,200	6,600	74,000	106,50	107,300	73,600	86,200	56,000	79,600	78,200
San Juan Islands (Areas 6, 7 & 7A)	3,200	6,700	5,200								
Puget Sound Marine (Areas 8 - 13)	22,300	44,700	37,800								
Puget Sound Rivers	78,000	19,600	16,300	124,200	98,800	121,900	58,600	66,100	40,300	32,000	51,600

Table 15. Preliminary 2005 landed CHINOOK catches for Washington and Oregon fisheries of interest to the Pacific Salmon Commission.

Footnotes:

1/ Estimates represent landed catch only and do not include non-retention mortality. 2005 estimates include catches from January 1 through October 31.

2/ 2005 Nontreaty troll quota of 43,250; treaty quota of 48,000; This column shows recreational chinook guidelines by area; quota of 43,250 is for all areas combined.

3/ Includes Area 4B catch during the PFMC management period (May 1 - September 30); excludes treaty troll catch outside PFMC period.

4/ Excludes Area 4B catch outside Council management period (Oct 1 - Apr 30)

5/ 2005 & 2004 catches represent summer-only, since CRC annual estimates are not yet available.

6/ Includes both Buoy 10, mainstem and tributary sport catch.

7/ Includes catch from the upper Chehalis (River+2A+2D) and Humptulips (River+2C).

Table 16 Preliminary 2005 landed COHO catches for Washington and Oregon fisheries of interest to the Pacific Salmon Commission. 1l Note: Patterned cells denote years/areas where some type of mark-selective fishery occurred. Refer to footnote 1/ or details.

Fisheries	2005 /2	2005 Preliminary Postseason	2004	2003	2002	2001	2000	1999	1998	1997	1996
Ocean Fisheries:											
Troll											
Cape Flattery & Quillayute (Areas 4 & 3) 3/	56,200	24,300	67,300	18,800	17,600	64,200	24,700	37,400	7,900	15,700	36,000
Columbia R & Grays Harbor (Area 2)	17,000	3,700	16,500	7,700	1,600	10,800	14800	0	0	0	0
Sport											
Neah Bay (Area 4) 3l	12,700	10,100	28,496								
LaPush (Area 3)	3,200	2,300	2,730	62,400	29,100	90,600	37,900	20,500	8,300	14,200	31,300
Grays Harbor (Area 2)	45,100	10,500	18,704								
Col. R. (Leadbetter Pt. to Cape Falcon)	60,900	38,700	65,695	106,400	59,400	116,700	39,600	27,100	6,500	16,900	24,800
Inside Fisheries:											
Sport											
Juan de Fuca (Areas 5 & 6) 4/	33,700	26,200	41,569	50,800							
San Juan Islands (7)	3,100	na	na	2,000	73,200	204,700	71,900	22,100	89,500	130,200	85,400
Puget Sound Sport (Areas 8-13 all	62,300	na	na	48,800							
Puget Sound Rivers	40,700	na	na	na	na	69,800	28,000	12,700	20,000	19,300	17,000
North WA Coastal Rivers	4,400	na	na	1,900	3,000	5,600	1,900	1,700	1,800	200	1,900
Grays Harbor (Areas 2A-2D)	2,800	na	na	na	13,200	20,900	3,200	3,900	2,300	1,600	7,200
Columbia River Buoy 10	12,000	6,900	16,500	54,300	6,200	132,000	21,500	8,900	3,200	20,400	4,500
Commercial											
North WA Coastal Rivers	58,600	60,200	52,700	44,700	71,900	69,300	30,100	45,500	20,000	4,200	38,300
Grays Harbor (Areas 2A-2D) 5/	26,200	25,700	22,500	18,300	21,100	18,800	16,700	14,600	14,500	5,600	64,700
Strait of Juan de Fuca (Areas 4B, 5 & 6C) Net and Troll	16,000	1,500	8,200	3,500							
San Juan islands (Areas 6, 7 & 7A)	14,700	6,600	20,100	700							
Puget Sound Marine (Areas 8 - 13)	199,400	176,500	223,000	88,500	181,100	265,600	279,800	79,800	124,200	123,300	120,500
Puget Sound Rivers	74,600	100,700	189,500	240,700	291,800	375,200	404,500	105,400	151,500	130,900	162,000

Table 16. Preliminary 2005 landed COHO catches for Washington and Oregon fisheries of interest to the Pacific Salmon Commission.

Footnotes:
1/ Estimates represent landed catch only and do not include non-retention mortality. 2005 estimates include catches from January 1 through October 31.
2/ 2005 Nontreaty troll quota of 23,200 marked coho; treaty troll quota of 50,000 coho; Recreational quotas as shown.
3/ Excludes Area 4B catch outside the PFMC management period (Oct 1 - Apr 30).
4/ 2005 & 2004 catches represent summer-only selective fisheries, since CRC annual estimates are not yet available. 2005 preseason estimate is for July-September period only and the preliminary postseason estimate is for Area 5 only.

5/ Includes catch from the upper Chehalis and Humptulips Rivers.

Preliminary Review of 2005 Washington Chum Fisheries of Interest to the Pacific Salmon Commission

This summary report provides a preliminary review of the 2005 chum fishing season and is subject to correction and revision as additional information becomes available. Some Washington chum fisheries are still underway and some fish ticket data may still not be in the catch reporting system. Catch and run size information provided are preliminary data reported through November 17. This report addresses in detail only those fisheries of concern under the Pacific Salmon Treaty. The mixed-stock fisheries in United States (U.S.) waters that are addressed in the Chum Annex of the Pacific Salmon Treaty are those in the western Strait of Juan de Fuca (areas 4B, 5 and 6C), the San Juan Islands (area 7) and the Point Roberts area (area 7A). Other chum fisheries in Washington waters are primarily terminal fisheries, which harvest runs of local origin.

Mixed Stock Fisheries

Areas 4B, 5, 6C

As in previous years, the chum fishery in areas 4B,5,6C was restricted to Treaty Indian gill net gear only. The fall chum fishery opened the week of October 10 and remained open 5 days per week until the conclusion of the fishery in mid-November.

Incidental catches of chum salmon occurred in fisheries for other species prior to the fall chum management period. A total of 58 chum were taken prior to September 16 (during the summer chum management period). An additional 248 chum were harvested incidental to coho fisheries prior to the fall chum management period. 1,482 chum were harvested in chum fisheries after October 10, bringing the total chum catch to 1,788 (Table 17).

No tissue samples for genetic analysis were collected from the 2005 fishery.

Areas 7 and 7A

Preseason forecasts were for a good return of fall chum in Puget Sound. In-season updates of abundance indicate many runs were less than expected (~ ½ preseason forecast). This is the second year with a new PSC agreement in place that modifies some provisions of the existing Chum Annex of the PST. This agreement calls for a flat exploitation rate limit on chum fisheries in Johnstone Strait, and specifies a fixed harvest level in U.S. Areas 7 and 7A, unless a critical abundance level is detected in the runs returning through Johnstone Strait. The Areas 7 and 7A harvest level, as specified in the agreement, is 130,000 chum plus an adjustment of 46,000 chum from previous underages, for a total target catch of 176,000 chum. Canada did not make a preseason forecast nor provide an in-season update of chum abundance, but did indicate in-season that the run size was not at a critical level. The new agreement also stipulates that chum fisheries in Areas 7 and 7A will not begin prior to October 10, and that if the Fraser River chum run is updated in-season to be less than 900,000 fish the U.S. will take actions to restrict fishery impacts on Fraser chum. The in-season Fraser chum run size estimate was 1.6 million, so this provision was not triggered in 2005.

Non-Treaty reef net fisheries targeting coho salmon were conducted following the end of Fraser Panel control, and continued open through the chum management period until mid-November.

A Treaty Indian gillnet and purse seine fishery opened at the start of the fall chum management period with a one-day fishery that opened on October 10 and closed on October 11. The Non-Treaty fishery followed with two days of gillnet and purse seine fishing on October 12 and 13. This was followed by another Treaty Indian opening on Friday October 14 through Saturday October 15.

For the week beginning October 16, the Treaty Indian fishery fished for three days from October 16 through October 18. The Non-Treaty fishery fished for two days from October 19 through October 20.

The Treaty Indian fishery reopened on October 21 and was open continuously into late November. The Non-Treaty fishery reopened on October 26 and continued through October 28.

Catches were good the first week of the chum fishery, but there was a drop off in catches in the second week of fishing. Catches continued to drop off and by the last week of November there was little to no catch or effort. Chum prices were improved over the past several years, but coupled with poor abundance and thus low effort in U.S. waters, the result was the fishery did not meet the quota for 2005.

There were 174 summer chum reported caught in areas 7 and 7A prior to September 16. These were taken incidental to sockeye fisheries. The total chum catch by all gears in areas 7 and 7A is reported, through late November, at 83,268 fish (Table 17).

Puget Sound Terminal Area Fisheries and Run Strength

Preseason forecasts for chum returns to Puget Sound were for a good fall chum run totaling about 1.8 million fish. Most Puget Sound chum runs have been updated in-season indicating overall returns that are much less than was expected pre-season. Current in-season estimates are for a reduced Puget Sound chum run of approximately 1.0 million. Some Puget Sound chum fisheries are still underway, and additional in-season estimates of abundance may be made. At this time, spawning escapement estimates are not available.

Table 17. Preliminary 2005 chum harvest in selected Puget Sound catch reporting areas.

Week(s)	Areas 4B,5,6C Treaty Indian	Areas 7 & 7A Treaty Indian	Areas 7 & 7A Non-Indian	Areas 7 & 7A Total
Prior to 9/16	58	168	6	174
9/16 – 10/9	248	1	2,073	2,074
10/10 – 10/15	0	15,211	26,006	41,217
10/16 - 10/22	356	22,006	5,499	27,505
10/23 – 10/29	802	6,701	4,671	11,372
10/30 – 11/17	324	582	344	926
Season Totals	1,788	44,669	38,599	83,268

Season Review and Highlights, 2005

U.S. Fraser River Sockeye Fisheries

The 2005 Fraser River Panel season was the seventh implemented under the renewed Annex IV of the Pacific Salmon Treaty (PST). The treaty establishes a bilateral (U.S. and Canada) Fraser River Panel (Panel) that develops a pre-season management plan and approves in-season fisheries within Panel Area waters directed at sockeye and pink salmon bound for the Fraser River (Figure 1). In partial fulfillment of Article IV, paragraph 1 of the PST, this document provides a season review of the 2005 U.S. Fraser River salmon fisheries as authorized by the Panel. Catch and abundance information presented is considered preliminary.

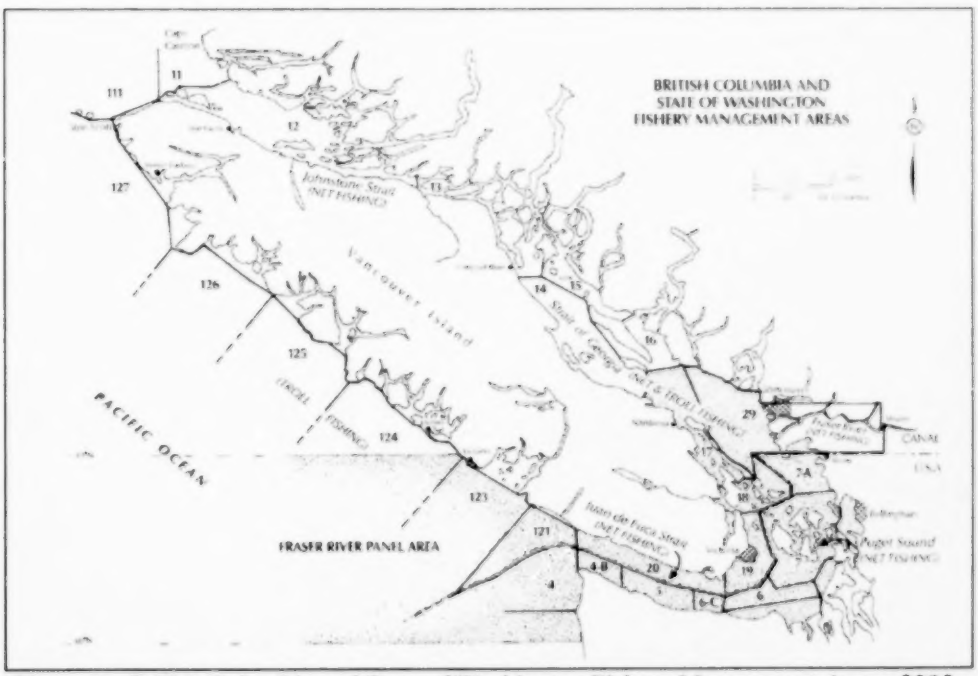


Figure 1. British Columbia and State of Washington Fishery Management Areas, 2005.

The shaded area in the map represents the marine waters managed by the Fraser River Panel.

Pre-season Management

Forecasts

The Department of Fisheries and Ocean, Canada (DFO) provided the Panel pre-season run size forecasts and escapement goals by stock group (run) at various probability levels. Table 1 shows the 2005 pre-season sockeye forecasts at the 50 percent probability level, which represents the mid-point of the range of possible run sizes. These are the forecasts agreed upon by the Panel for use in pre-season fishery planning. Table 1 also provides the escapement goals for timing groups based on the pre-season forecasted abundance. The escapement goals for all timing groups except the Late runs, can change in-season as the run size estimates change.

Fraser River pink salmon returns were projected pre-season at 16,318,000 fish, however, fisheries directed at Fraser River pink salmon were expected to be substantially limited by the late-run sockeye guidelines, and it was anticipated that most of the available pink salmon would not be harvested.

Table 18. 2005 Pre-season Fraser River sockeye Forecasts and Escapement Goals, by Stock Group.

	Early Stuart	Early Summer	Summer	Late	Total
Forecast of Abundance	258,000	718,000	11,048,000	247,000	12,548,000
Escapement Goal	194,000	362,000	5,262,000	15% E.R. Limit	N.A.

Diversion

Diversion is defined as the percentage of Fraser sockeye or pink salmon migrating through Johnstone Strait (rather than the Strait of Juan de Fuca) in their approach to the Fraser River. Diversion through Johnstone Strait was forecasted pre-season to be 80% for sockeye. Diversion was modeled on a daily basis starting at 0% (100% migration through the Strait of Juan de Fuca) in late June and climbing to 85% in steady increments by early August.

Management Adjustment (MA) and Environmental Conditions

Management Adjustments reflect the expected difference between escapement estimates at Mission (minus catch above Mission) and actual spawning escapements. If the adjustments are adopted by the Panel, they are added to the gross escapement goal, effectively increasing the goal for an impacted run. For 2005, the Management

Adjustment was modeled using discharge and temperature predictor variables. Table 2 provides the pre-season projected MA's that were used for planning fisheries. In-season management adjustments use MA models that are based on both measured and forecasted temperatures and discharges.

Table 19. 2005 Pre-Season Management Adjustments

Early Stuart		Early Summer		Summer	
Difference Between Estimates	**Management Adjustment**	**Difference Between Estimates**	**Management Adjustment**	**Difference Between Estimates**	**Management Adjustment**
42%	142,000	35%	173,000	13%	766,000

Run Timing

Run timing is temporal information about the presence of a salmon stock in a specific area during the time the stock is migrating through that area. Run timing is an important variable when planning fisheries and predicting run size in-season. The following Area 20 50% dates (the dates when 50% of the stock or run group is forecasted to have passed through Area 20) were predicted pre-season for the major Fraser sockeye run groups.

Table 20. 2005 Area 20 Pre-Season 50% Run Timing Dates

Run Group	Area 20 50% Run Timing Date
Early Stuart	July 3
Early Summers	July 23
Summers	August 8
Birkenhead	August 13
True Lates	August 14

U.S. Total Allowable Catch (TAC)

Pre-season, the U.S. TAC was established at 806,000 sockeye. Pink salmon allowable catches were not a consideration in pre-season planning due to restrictions required for late run sockeye.

Pre-Season Management Plans

During the preseason planning process the Fraser Panel evaluates and adopts management approaches for Fraser sockeye and pink salmon that address conservation, and harvest objectives for each major stock group. The Fraser River Panel develops fishing plans and in-season decision rules with the objective to meet management goals. Managing Fraser River sockeye and pink salmon involves a trade-off between catching abundant stocks and meeting escapement objectives for less abundant stock groups.

In 2005 the Panel adopted a management plan that recognized that fishing opportunities would be constrained by Early Summer runs at the beginning of the season and Late-Run

stocks later in the season. There was no TAC predicted to be available for Early Stuart sockeye in 2005, and commercial fisheries were not contemplated on this timing group. It was expected that the Early Stuart runs would be monitored in-season with regular run size assessments starting in late June.

The true Late-run stocks were expected to make up only 2% of the 2005 sockeye return, and the pre-season expectation was that in-season updates of Late-run timing and abundance were unlikely during the short period in which most of the fisheries would occur. The Panel agreed upon a catch limit to in-season management, whereby each party would be limited to their Late-run catch share, with the in-season estimate of catch impacts based on DNA analysis of catch samples.

The Panel developed a pre-season fishing plan that balanced the competing objectives of maximizing the Summer run catch (which made up the bulk of the TAC) and meeting the gross escapement goal for Early Summer runs and the 15% exploitation rate limit for the Late-runs. For the U.S. fisheries this meant that sockeye openings would likely be constrained to the last week of July and the first two weeks of August, and an approximate pre-season fishing schedule was developed for that window of opportunity. The limitations for the Early Summer and Late-runs also meant that it was unlikely that either party could achieve its allowable TAC on Summer runs. Pink salmon fisheries were anticipated only after the Late-run sockeye had mostly cleared the fishing areas, which would limit the parties' ability to catch very much of the available pink salmon harvest.

In-Season Management

In-season, the Pacific Salmon Commission staff analyzes a variety of information to produce best estimates of diversion, management adjustments, run-timing, abundance, and harvest by stock group. These estimates are created using stock ID information, test fishing data, counts of escapements past Mission, harvest data and environmental information.

Run Assessment

The final in-season abundance estimates (Table 21) indicate that most stock groups came back similar to or greater than pre-season expectations, except for the Summer runs, which made up the bulk of the abundance in the 2005 sockeye returns. The Summer runs returned at only 63% of expectations, and the total sockeye return for 2005 was only 70% of the pre-season prediction.

The most significant features of the 2005 Fraser sockeye returns were the extremely late timing for all of the stock groups, an extended migration duration for most stock groups, and a high diversion rate. Table 22 provides the pre-season timing expectations and the final in-season estimates of Area 20 50% run timing dates. The delay in timing from the pre-season expectation ranges from 10 days for the late runs to almost a month for the Early Summer stock group. These delays were well beyond what had been previously observed for all of the stock groups, and created significant difficulties in managing the 2005 fisheries. The poor early showing of all of the timing groups could not be readily distinguished from low abundance until a majority of each run had been observed.

Table 21. Comparison of pre-season vs. in-season abundance estimates for Fraser River Sockeye Salmon by Stock Group (run).

Stock Group	Pre-Season 50% Probability Forecast	In-Season Run Size Estimate	Comparison: In-Season vs. 0Pre-Season Forecast
Early Stuart	258,000	209,500	81%
Early Summer	718,000	805,000	112%
Summer	11,048,000	7,000,000	63%
Late	524,000	760,000	145%
Total	12,548,000	8,774,500	70%

Table 22. 2005 Preliminary 50% Run Timing Date in Area 20

Run Group	Pre-season 50% Run Timing Date	In-season 50% Run Timing Date
Early Stuart	July 3	July 16
Early Summers	July 23	August 20
Summers	August 8	August 23
Lates	August 14	August 24

Season Description

Week ending August 6:

Low impact U.S. treaty fisheries commenced in Areas 4B/5/6C on August 1, approximately a week later than provided for in the pre-season fishing plan. The Early Stuart run was updated to about 200,000 sockeye with run timing much later than normal. Preliminary Early Summer and Summer run assessments suggested they were also tracking much later than normal, but it was too early to assess abundance.

Week ending August 13:

Treaty fisheries in Areas 4B/5/6C continued open throughout the week, however effort and catches in the fishery remained low. The Early Summer run was returning much later than normal and its abundance now appeared to be tracking well below the forecast level, and was updated by the Panel to only 250,000 sockeye. The diversion rate was projected to be at 60%.

Week ending August 20:

The bulk of the Summer run sockeye had not shown up yet which caused concern within the Panel for the abundance of this stock group and for continuing any fisheries. Treaty fisheries in Areas 4B/5/6C continued open until noon on August 17. The fishery remained closed until August 20, when this fishery was reopened, based on some

improvement in test fishing results, the very low effort in this fishery, and a desire by the Panel to obtain information from this fishing area. The diversion rate was estimated to be about 65%.

Week ending August 27:

All run timing components continued to return with exceptionally late run timing. The Panel updated the Summer run component run size on August 22 to 4.5 million, less than half of the pre-season expectation. Subsequent improvements in test fishing led to updating the Summer run stock group to 5.0 million on August 24, and 6.0 million on August 26. Similarly, the Early Summer timing component was updated throughout the week, reaching 450,000 sockeye by the end of the week. The diversion rate was estimated at 70 – 80%. Pink salmon now appeared to be building in abundance in the fishing areas. Treaty fisheries in Areas 4B/5/6C continued throughout the week and the Panel decided to finally open commercial fisheries in Areas 6/7/7A. Non-treaty fisheries were open for one day in Areas 7/7A on August 25, and treaty fisheries were open in Areas 6/7/7A for three days from August 26 through August 28th. These fisheries opened almost one month later than planned pre-season.

Week ending September 3:

Treaty Fisheries in Areas 4B/5/6C continued through August 30th. Treaty fisheries in Areas 6/7/7A closed on August 28th and a Non-treaty fishery was held in Areas 7/7A on August 29th. It appeared at this time that the U.S. had harvested its full share of Late run impacts and no further fishing was scheduled until late in the week when updates of abundance for Summer and Late runs, and additional DNA information became available. These updates provided for some additional U.S. share of Late run sockeye. The diversion rate was estimated to be 80%.

Week ending September 10:

Treaty fisheries in Areas 4B/5/6C re-opened on September 3 and remained open until September 7th. Treaty fisheries in Areas 6/7/7A were re-opened from September 3rd through September 5th. Non-treaty fisheries in Areas 7/7A were re-opened for two days on September 6th and 7th, and again on September 9th for one day. The Apex portion of Area 7A was kept closed during the openings from September 3rd to September 6th due to concerns for Late run stock impacts. The diversion rate was estimated to be up to 95% for sockeye and 70% for pink salmon. The Early Summer run component was updated to 750,000 sockeye, the Summers to 7.0 million, and the Lates to 560,000. The pink salmon run was estimated to be about 8 – 9 million, well above the escapement goal of 6 million.

Week ending September 17:

Treaty fisheries in Areas 4B/5/6/6C/7/7A all re-opened on September 10th for three days, closing on September 12th. This was followed by two additional days of Non-treaty fishing in Areas 7/7A on September 13th and 14th. Given the low abundance of sockeye and pink salmon in Areas 4B/5/6C, the Panel decided to relinquish control over these areas effective on September 13th. There was no further fishing conducted in Areas 6/7/7A after September 14th. The Panel relinquished control over Areas 6/7 and most of 7A on September 16th. The Apex portion of Area 7A remained under Panel control, and remained closed to fishing, until October 8th, when Panel control was relinquished.

Harvest

Between August 1 and September 14 the United States caught a total of 207,864 sockeye and 295,200 pink salmon in Panel area waters (Tables 23 and 24)[4]. During this time period Areas 4B/5/6C were open for a total of 32 days. The treaty fishery in Areas 6/7/7A was open for 9 days and the non-treaty fishery in Areas 7/7A was open for 7 days. The high diversion rate, the Early Summer and Late run stock constraints, and the late timing of the sockeye runs all contributed to the U.S. falling far short of catching the total allowable U.S. TAC of 429,000 sockeye. The lateness of the sockeye returns also precluded any opportunity for the U.S. to conduct a directed pink salmon fishery.

Table 23. Preliminary estimates of 2005 U.S. catches of Fraser River sockeye salmon in Panel area waters.

	Treaty Indian	Non-Indian
C and S	6,694	0
Catch Areas 4B/5/6C	5,262	0
Catch Areas 6/7/7A	131,208	64,700
Total	143,164	64,700
% of U.S. Catch	68.9%	31.1%

Table 24. Preliminary estimates of 2005 U.S. catches of Fraser River pink salmon in Panel area waters.

	Treaty Indian	Non-Indian
C and S	0	0
Catch Areas 4B/5/6C	4,000	0
Catch Areas 6/7/7A	164,200	127,000
Total	168,200	127,000
% of U.S. Catch	57.0%	43.0%

[4] Catch data reported by PSC staff as of 9/22/05.

D. 2005 UPDATE REPORTS FOR SALMONID ENHANCEMENT PROGRAMS IN THE UNITED STATES AND CANADA

The Pacific Salmon Treaty between Canada and the United States requires that information be exchanged annually regarding operation of and plans for existing enhancement projects, plans for new projects, and views concerning the other country's enhancement projects. In 1988, a committee was formed to develop recommendations for the pre- and post-season and enhancement report formats. In summary, the committee proposed that:

- detailed reports on existing enhancement facilities of the type produced in 1987 be prepared every four years;
- the Parties will annually update information on eggs taken, fry or smolt released and adults back to the facility; significant changes in facility mission or production will be highlighted in narratives; and
- the Parties will provide periodic reports through the appropriate panels on new enhancement plans.

1. 2003 ANNUAL REPORT ON THE SALMON ENHANCEMENT ACTIVITIES OF THE UNITED STATES

Introduction

The Pacific Salmon Treaty provides that, "2. Each year each Party shall provide to the other Party and to the Commission information pertaining, *inter alia*, to: (a) operations of and plans for existing projects; (b) plans for new projects;..."(Article V). The United States provided a report dated January 31, 1990 to Canada that combined under one cover all pertinent biological data for United States enhancement projects with a detailed account of plans for new projects. The 2003 Annual Report incorporates updated information through the end of the 2003 calendar year for releases, numbers of adults returning to hatcheries, and the number of eggs taken.

Information is organized by hatchery managing agency or region, and by brood year of releases or calendar year of returns and egg takes. Each agency is to report

1. New production
2. Losses of production
3. Major trends in production
4. Brood year releases of juveniles by facility
5. Calendar year returns of adults to enhancement facilities
6. Calendar year takes of eggs by facility

Agencies in Washington, Oregon and Idaho face the challenge of coordinating enhancement activities with recovery actions for endangered species. Recovery actions regarding enhancement activities will also lead to changes in the abundance of fish available for ocean fisheries.

SOUTHEAST ALASKA
State-operated and Private Non-profit Fish Hatchery Production

New Production

In general, hatchery operators in Southeast Alaska continued to maintain maximum permitted production from their facilities. There have been several permit alterations allowing for increases of production numbers: a two million egg increase in permitted chinook production (from 3.2 million eggs to 5.2 million eggs) at the Medvejie Central Incubation Facility, near Sitka on Baranof Island; a 12 million egg increase in permitted summer chum salmon production at the Neets Bay Hatchery located near Ketchikan on Revillagigedo Island; and a 10 million egg increase in permitted summer chum salmon production at the Hidden Falls Hatchery located on Baranof Island.

Loss of Production

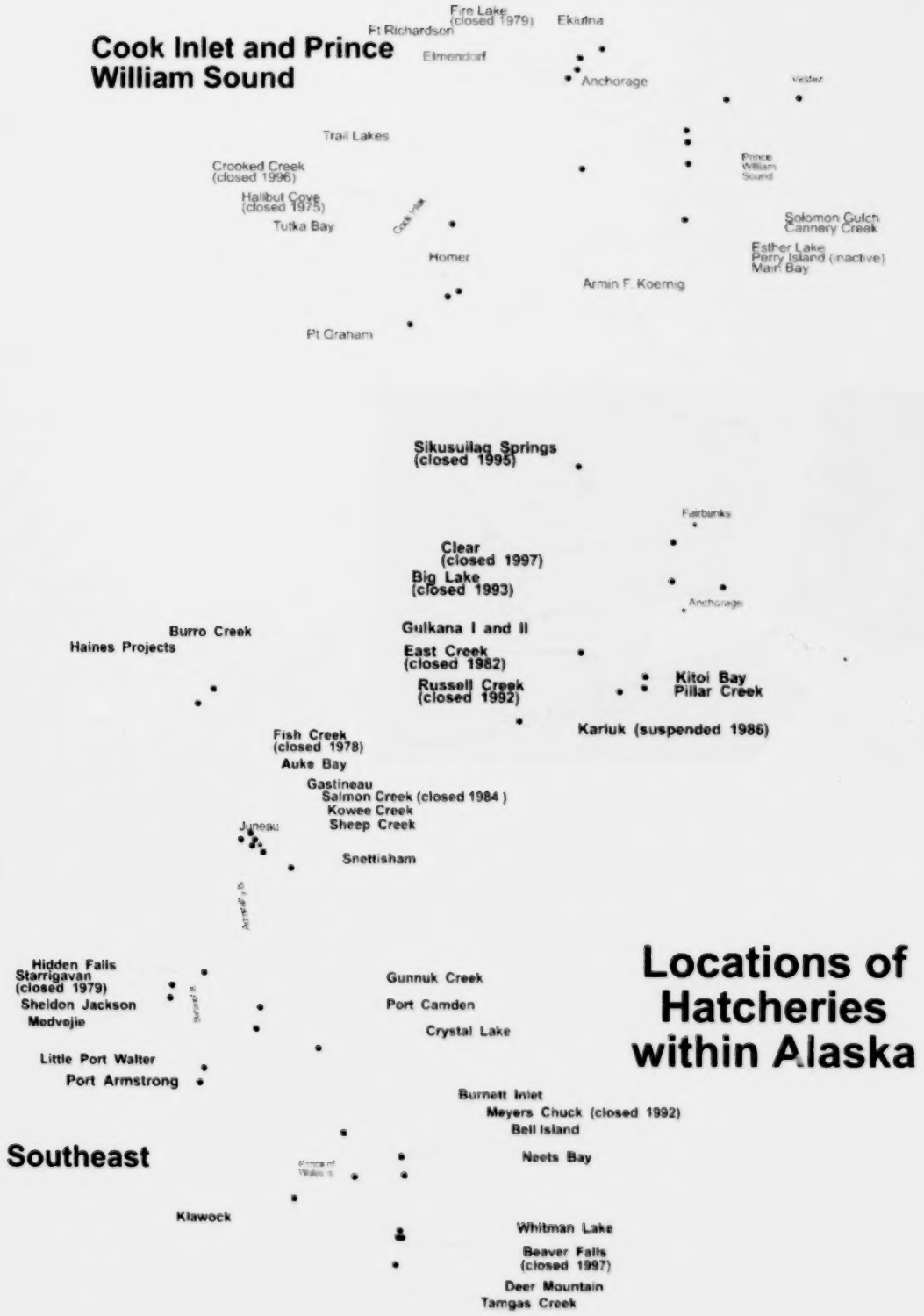
There was no loss of production in hatchery operations in Southeast Alaska. Normal variation in broodstock abundance has resulted in minor fluctuations in annual production from some Alaskan hatcheries.

Trends in Production

Most private non-profit hatcheries in Southeast Alaska are at or near their permitted capacities. Returns to Alaskan hatcheries fluctuate annually as the result of varying marine survival rates caused by the natural variations in the marine environment. The adult return rate from the production of hatchery Chinook salmon was low, while adult return rates from the production of coho salmon were very high in 2003. The marine survival rate for Chinook salmon production from Southeast Alaska has been low for the last decade, and is likely due to unfavorable marine conditions for that species. The marine survival rates for coho salmon production has been high in recent years, likely due to favorable marine conditions.

Fed Fry: 25% weight gain from emergent fry
Fingerling: 100% weight gain from emergent fry
Smolt-0: no winters in fresh water
Smolt-1: one winter in fresh water
Pre-smolt: stocked in lakes in the fall

ADFG: Alaska Dept Fish & Game
PNP: Private Non-Profit
RS: Release site
NMFS: National Marine Fishery Service
SH: School Hatchery
MIC: Metlakatla Indian Community


Cook Inlet and Prince William Sound
Fire Lake (closed 1979)
Ft Richardson
Eklutna
Elmendorf
Anchorage
Valdez
Trail Lakes
Crooked Creek (closed 1996)
Prince William Sound
Halibut Cove (closed 1975)
Tutka Bay
Cook Inlet
Solomon Gulch
Cannery Creek
Esther Lake
Perry Island (inactive)
Main Bay
Homer
Armin F. Koernig
Pt Graham
Sikusuilaq Springs (closed 1995)
Fairbanks
Clear (closed 1997)
Big Lake (closed 1993)
Anchorage
Burro Creek
Haines Projects
Gulkana I and II
East Creek (closed 1982)
Kitoi Bay
Pillar Creek
Russell Creek (closed 1992)
Kariuk (suspended 1986)
Fish Creek (closed 1978)
Auke Bay
Gastineau
Salmon Creek (closed 1984)
Kowee Creek
Sheep Creek
Juneau
Snettisham
Admiralty Is
Hidden Falls
Starrigavan (closed 1979)
Sheldon Jackson
Medvejie
Gunnuk Creek
Port Camden
Crystal Lake
Little Port Walter
Port Armstrong
Burnett Inlet
Meyers Chuck (closed 1992)
Bell Island
Neets Bay
Klawock
Whitman Lake
Beaver Falls (closed 1997)
Deer Mountain
Tamgas Creek
Locations of Hatcheries within Alaska
Southeast

Chinook releases from Southeast Alaska enhancement projects by brood year

Hatchery	Stage	Agency	1995	1996	1997	1998	1999	2000	Preliminary 2001	Preliminary 2002
Burro Creek	Smolt-1	PNP	12,815	15,981	16,424	0	0	0	0	0
Crystal Lake	Fingerling	ADFG							0	0
Crystal Lake	Smolt-1	ADFG	1,379,000	1,417,000	1,382,654	1,576,372	1,376,000	554,100	1,134,000	852,019
Deer Mountain	Smolt-1	ADFG	97,900	101,300	51,411	90,314	89,500	96,000	98,000	69,194
Gastineau	Fry	PNP							0	0
Gastineau	Smolt-1& 2	PNP	572,000	565,600	578,300	523,800	585,900	573,000	303,000	427,292
Hidden Falls	Smolt-1	PNP/ADFG	944,500	1,070,885	1,104,403	1,232,716	1,200,000	1,145,800	1,248,000	1,064,193
L Port Walter	Smolt-1	NMFS	202,200	107,700	106,500	134,100	105,676	0	190,000	131,676
Medvejie Creek	Smolt-1	PNP	1,053,000	1,119,512	1,596,867	2,043,100	2,040,000	1,953,400	1,502,000	2,293,150
Medvejie Creek	Smolt-0	PNP					205,623	309,500	300,000	262,000
Neets Bay	Smolt-1	PNP	1,000	138,100	194,100				521,449	351,759
Neets Bay	Pre-smolt	PNP			29,800	273,600	248,700	301,000	257,000	258,000
Sheldon Jackson	Smolt-1	PNP	79,100	41,323	11,400	88,124	65,000	28,000	0	0
Snettisham	Fry	ADFG							0	0
Port Armstrong	Smolt-1	PNP							107,000	69,525
Tamgas	Fry	MIC							0	0
Tamgas	Smolt-1	MIC	381,700	523,300	501,200	485,600	370,000	540,000	245,000	258,188
Tamgas	Smolt-0	MIC	964,000	197,100			102,200	187,500	300,000	258,188
Whitman Lake	Smolt-1	PNP	697,200	713,300	741,900	779,800	782,600	689,600	702,000	729,850
			6,384,415	6,011,101	6,314,959	7,227,526	7,171,199	6,377,900	6,907,449	7,025,033

Chum releases from Southeast Alaska enhancement projects by brood year

Hatchery	Stage	Agency	1995	1996	1997	1998	1999	2000	Preliminary 2001	Preliminary 2002
Burnett Inlet	Fingerling	PNP	41,000,000						0	0
Burro Creek	Fry	PNP	13,600		24,500	5,940			0	0
Gastineau	Fingerling	PNP	89,982,000	80,784,000	94,607,000	96,466,000	105,208,000	103,910,000	71,474,952	95,901,995
Gunnuk Creek	Smolt-1	PNP	36,617,000	42,498,000	54,606,000	43,062,000	61,107,000	46,220,000	41,508,020	34,222,600
Haines Projects	Fry	PNP	484,000	199,500	863,000	1,324,000	1,254,000	1,670,000	554,100	707,500
Hidden Falls	Fry	PNP/ADFG	76,672,000	62,566,000	63,692,000	74,674,000	74,949,000	81,850,000	72,820,877	75,415,683
Medvejie Creek	Fingerling	PNP	39,578,000	38,575,000	39,320,000	39,840,000	39,071,000	40,930,000	47,741,800	48,208,000
Neets Bay	Fingerling	PNP	61,656,000	74,089,000	73,256,000	72,139,000	72,948,000	66,680,000	68,639,423	44,437,556
Port Camden	Fry	PNP	4,827,000	4,392,000	2,369,000				0	0
Sheep Creek	Fingerling	PNP	24,605,000	25,939,000					0	0
Sheldon Jackson	Fry	PNP	3,540,000	3,400,000	1,670,000	1,338,000	3,379,000	3,860,000	954,387	182,225
Tamgas	Fry	MIC	1,545,000	1,000,000	400,000	450,000		260,000	773,000	742,915
Whitman Lake	Fingerling	PNP	32,284,304	25,296,000	26,014,000	25,369,000	26,756,000	26,900,000	25,502,674	27,344,978
			412,803,904	358,738,500	356,821,500	354,667,940	384,672,000	372,280,000	329,969,233	327,163,452

Coho releases from Southeast Alaska enhancement projects by brood year

Hatchery	Stage	Agency	1995	1996	1997	1998	1999	2000	Preliminary 2001	Preliminary 2002
Auke Creek	Smolt-1	FED		18,000	52,000				0	
Burnett Inlet	Smolt-1	PNP		164,100	1,502,000	1,801,000	1,695,318	236,635	251,201	853,226
Burnett Inlet	Pre-smolt	PNP						1,942,381	1,701,000	1,208,860
Burro Creek	Smolt-1	PNP	47,000		50,000					
Crystal Lake	Fry	ADFG			110,000				0	0
Crystal Lake	Smolt-1	ADFG	251,000	93,130	99,000	149,000	176,240	178,425	178,875	91,918
Deer Mountain	Presmolt	ADFG/PNP	70,768	75,262	63,525	78,382	57,731	76,147	52,567	49,985
Deer Mountain	Smolt-1	ADFG/PNP	69,053	75,229	63,361	78,621	57,649	59,802	52,413	49,985
Gastineau	Fry	PNP								
Gastineau	Smolt-1	PNP	1,001,000	823,659	784,000	806,000	770,656	813,225	783,928	393,799
Gunnuk Creek	Fingerling	PNP	35,000			13,000	32,600	0	59,573	0
Hidden Falls	Smolt-1	PNP/ADFG	1,501,000	1,489,644	1,658,000	1,602,000	1,984,648	1,954,204	2,023,849	1,521,486
Klawock	Fingerling	ADFG/PNP			1,170,000				0	0
Klawock	Smolt-1	ADFG/PNP	395	622,143	1,330,102	435,742	1,596,381	2,065,306	2,908,348	4,620,000
Medvejie Creek	Smolt-1	PNP	235,000	245,063	7,045	209,032	236,645	1,310,139	230,252	1,570,388
Medvejie Creek	Fry	PNP	2,394,000	2,715,000	2,829,000	2,525,000		0	0	0
Neets Bay	Smolt-1	PNP	3,382,000	2,414,000	2,751,000	3,099,000	2,737,762	3,065,019	2,077,316	1,171,910
Port Armstrong	Smolt-1	PNP	1,152,000	123,850	625,000	1,358,000	975,549	1,468,761	1,331,351	923,038
Port Armstrong	Fry	PNP		1,500,000					0	0
Sheep Creek	Smolt-1	PNP				91,000				
Sheldon Jackson	Smolt-1	PNP	74,000	28,000	19,700	84,000	43,540	10,560	4,158	990
Tamgas	Smolt-1	MIC	3,728,000	3,566,571	3,086,000	3,099,000	3,161,483	1,600,000	1,714,675	1,714,675
Whitman Lake	Fry	PNP							0	0
Whitman Lake	Smolt-1	PNP	1,588,355	1,941,850	731,000	822,000	802,686	815,200	1,800,416	958,500
			15,528,571	15,895,501	16,930,733	16,250,777	14,328,888	15,595,804	15,169,922	15,128,759

Pink releases from Southeast Alaska enhancement projects by brood year

Hatchery	Stage	Agency	1995	1996	1997	1998	1999	2000	Preliminary 2001	Preliminary 2002
Auke Creek	Fry	NMFS		65,000					0	0
Burnett Inlet	Fingerling	PNP	12,180,000						0	0
Burro Creek	Fry	PNP	415,000	300,000	350,000	215,000			0	0
Gastineau	Fingerling	PNP	8,744,000	5,901,000	8,709,000	5,670,000	1,682,000	1,720,000	1,696,762	0
Gunnuk Creek	Fingerling	PNP							0	0
Little Port Walter	Fry	FED							0	0
Medvejie Creek	Fry	PNP	186,000	276,000	209,000	270,000	178,000	290,000	257,500	265,000
Port Armstrong	Fry	PNP	72,480,000	81,412,000	75,777,000	73,269,000	85,639,000	52,340,000	72,663,780	83,470,980
Sheldon Jackson	Fry	PNP	7,900,000	6,700,000	4,500,000	3,780,000	1,650,000	5,330,000	861,422	796,000
			101,905,000	94,654,000	89,545,000	83,204,000	89,149,000	59,680,000	75,479,464	84,531,980

Sockeye releases from Southeast Alaska enhancement projects by brood year

Hatchery	Stage	Agency	1995	1996	1997	1998	1999	2000	Preliminary 2001	2002
Beaver Falls	Fry	ADFG/PNP	886,000	869,900					0	0
Beaver Falls	Smolt-0	PNP							0	0
Burnett Inlet-SSRAA	Fry	PNP				203,000	380,044	445,271	465,043	423,963
Burnett Inlet-SSRAA	Smolt	PNP					443,240		394,153	122,308
Haines Projects	Fry	PNP	296,000	572,000	96,500	431,670	0	0	0	0
Klawock	Fry	ADFG/PNP	324,000	245,000	581,000	868,025	359,431	254,227	510,140	364,587
Snettisham	Fry	ADFG	3,420,100	3,038,171	6,205,000	5,561,121	3,965,786	532,431	5,276,182	5,625,916
Snettisham	Smolt-1	ADFG	0	5,629,799	5,030,000	5,185,440	4,805,526	5860987	5,815,630	4,040,784
Tamgas	Smolt-2	PNP							1,695	23,864
			4,926,100	10,354,870	11,912,500	12,249,256	9,954,027	7,092,916	12,462,843	10,601,422

Steelhead releases from Southeast Alaska enhancement projects by brood year

Hatchery	Stage	Agency	1995	1996	1997	1998	1999	2000	Preliminary 2001	2002
Crystal Lake	Smolt-1	ADFG							0	0
Deer Mountain	Presmolt	ADFG/PNP	7,269	6,439	2,500	9,000	0	7,165	8,756	0
Little Port Walter	Smolt	FED			17,000		5,362	15,530	13,397	0
Klawock	Smolt	ADFG/PNP	1,510	3,000		4,750	2,096		0	0
Klawock	Fry	PNP							5,644	0
			8,779	9,439	19,500	13,750	7,458	22,695	27,797	0

Fed Fry: 25% weight gain from emergent fry
Fingerling: 100% weight gain from emergent fry
Smolt-0: no winters in fresh water
Smolt-1: one winter in fresh water
Pre-smolt: stocked in lakes in the fall

ADFG: Alaska Dept Fish & Game
PNP: Private Non-Profit
RS: Release site
NMFS: National Marine Fishery Service
SH: School Hatchery
MIC: Metlakatla Indian Community

Adult chinook escapement at Southeast Alaska enhancement projects 1992 - 2003 (not incl. broodstock)

Hatchery	Agency	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Burnett Inlet	PNP	300	156										
Burro Creek	PNP								25				
Carrol Inlet	PNP	300		200									
Crystal Lake	ADFG	2,680	1,973	2,633	2,132	65	145	811					
Deer Mountain	ADFG/PNP	742	569	170	100	260	150	235	326	350	600	207	215
Gastineau	PNP								248				198
Hidden Falls	ADFG/PNP	665		247	1,500	1,000	650	700					
Jerry Meyers	SH	575	1,092										
Juneau/DJ	ADFG			1,241									
L Port Walter	NMFS	1,932					1,142						
Medvejie Creek	PNP	2,850	1,308									375	
Port Armstrong	PNP	119	500	20			220						
Sheldon Jackson	PNP	75	9	550	68		150	65	360				73
Snettisham	ADFG	100	372		15								
Tamgas	MIC								677				
Tahini River	ADFG		38	86	22								
Whitman Lake	PNP	10,338											2,500
Neets Bay	PNP												
Total		20,676	6,017	5,147	3,837	1,325	2,457	1,811	1,636	350	600	582	2,986

Adult chum escapement at Southeast Alaska enhancement projects 1992 - 2003 (not incl. broodstock)

Hatchery	Agency	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Burnett Inlet	PNP	15,078	4,000	5,699	32,000								
Burro Creek	PNP	8	17	4	6				8				
Dog Salmon	ADFG			357	127								
Gastineau	PNP	284		14,197									
Gunnuk Creek	PNP	866	6,740		5,854	22,200	24,504	9,293	10,980	14,880	2,066	630	917
Haines Projects	PNP		3,000	2,600	3,900	3,471	5,254	4,384	7,882	11,086	3,062	1,733	
Hidden Falls	ADFG/PNP	18,894	49,759	8,350	3,950	12,417	1,400	8,000					1,366
Kowee Creek	PNP												
Limestone Inlet	PNP	100	120	2,607									
Marx Creek	ADFG	16,135	36,303	9,535	1,033	152							
Medvejie Creek	PNP	31,080	23,430	2,400	1,640	3,200	720	1,017	1,700	2,000	1,300	1,000	2,900
Neets Bay	PNP					198,300	43,897						
Sheep Creek	PNP	42,384	11,718	32,973	15,000	35,000	25,000						
Sheldon Jackson	PNP	25	390		60	58	433	126			524	5	
Snettisham	ADFG		323	785									
Sunny Creek	ADFG				595								
Tamgas Creek	MIC								750				
Total		124,854	135,800	79,507	64,165	274,798	101,208	22,820	21,320	27,966	6,952	3,368	5,183

Adult coho escapement at Southeast Alaska enhancement projects 1992 - 2003 (not incl. broodstock)

Hatchery	Agency	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Burnett Inlet	PNP	47											3,500
Burro Creek	PNP		40	4	150				30				
Cable Creek	ADFG	600		743	171								
Chilkat Ponds	ADFG	200											
Crystal Lake	ADFG	1,480		1,512	50	300	900						
Deer Mountain	ADFG/PNP	1,500		550	400	1,111	300	250	682	250	500	1,300	1,000
Dog Salmon	ADFG/USFS	60	259	783	100								
Gastineau	PNP	6,139		3,119									
Gunnuk Creek	PNP								560		37	252	
Hidden Falls	PNP	5,727	941	3,189	60			500					4,400
Indian Lake	ADFG	400	1,600	524									
Jerry Meyers	SH	1,515											
Juneau/DJ	ADFG	7											
Klawock	ADFG/PNP	11,950		9,501	9,800	2,652	6,000	9,023	8,506	9,513	4,858	13,601	5,997
Margaret Lake	ADFG		106			407							
Medvejie Creek	PNP		1,293					250				375	
Neets Bay	PNP	500											
Patterson Bay	PNP	625											
Port Armstrong	PNP	737	2,307	159	25,200			3,202	2,191		2,000		
Rio Roberts	ADFG	45			111								
Reflection Lake	ADFG	575			43								
Sheep Creek	PNP			25									
Sheldon Jackson	PNP	170	59	170	401	256	195	110	240				
Tamgas	MIC								1,200				
Tunga Lake	ADFG/PNP		3,500										
Ward Creek	ADFG/PNP	940			685	4,200	1,700	1,400	1,550				
Total		33,217	10,105	20,279	37,171	8,926	9,095	14,735	14,959	9,763	7,395	15,528	14,897

Adult pink escapement at Southeast Alaska enhancement projects 1992 - 2003 (not incl. broodstock)

Hatchery	Agency	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Auke Creek	NMFS					2,840							
Burnett Inlet	PNP		39,000	44,943	52,000								
Burro Creek	PNP	1,281		100	250			500	2,000				
Dog Salmon	ADFG	5,475	2,392	8,061	3,647	55,500							
Gastineau	PNP	96,147		22,198									
Gunnuk Creek	PNP	29,772	13,368										
Ketchikan Creek	ADFG/PNP	50,000	40,000	32,712	24,725	180,500							
Margaret Lake	ADFG/PNP	10,491	7,840		27,131	23,892							
Port Armstrong	PNP	176,400	34,387	16,625	36,600		63,726	62,250	101,752	70,000	70,000	50,000	
Sheep Creek	PNP	6,234	737	24,498									
Sheldon Jackson	PNP	8,419	1,177	36,000	4,200	168,000	235,000	25,000			2,974	70	100,000
Sunny Cr Fishpass	ADFG	17,100	26,977	9,279	99,000	150,500							
Total		401,319	165,878	194,416	247,553	581,232	298,726	87,750	103,752	70,000	72,974	50,070	100,000

Adult sockeye escapement at Southeast Alaska enhancement projects 1992- 2003 (not incl. broodstock)

Hatchery	Agency	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Bakewell Fishpass	ADFG	2,163	532	3,000									
Beaver Falls	ADFG/PNP		200										
Burnett Inlet	PNP												108,811
Chilkat Lake	PNP							54,000		4,879			
Haines Projects	PNP			1,088	1,370	2,772	421	290					1,852
Hugh Smith Lake	ADFG	65,586	11,800	8,915	3,422	7,123	12,180	920	2,898	4,001	3,533		
Klawock	ADFG/PNP	4,649		9,142	14,690		780	2,070	4,749		6,914	13,255	6,262
McDonald Lake	PNP	113,000	83,514	106,484	43,898	61,719	73,313	57,557	89,262	90,623	42,768		
Margaret Lake	ADFG	322		347	136								
Salmon Bay/Karta	PNP		9,000		21,225		20,000		15,700	9,103			
Stikine River	ADFG/PNP				15,961	18,916							
Snettisham	PNP								4,758				
Sweetheart Lake	PNP	300	20,000	10,000									
Taku River	ADFG/PNP				2,400	14,864							
Virginia Lake	PNP		2,000		1,402	9,941				2,390			
Total		186,020	127,046	138,976	104,504	115,335	106,694	114,837	117,367	110,996	53,215	13,255	116,925

Chinook eggs taken at Southeast Alaska enhancement projects, 1994 - 2003

Hatchery	Agency	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Burro Creek	PNP	70	22	0	50	100	30	122	105	0	0
Crystal Lake	ADFG	1,800	2,754	1,910	1,686	2,349	1,520	1,590	2,190	2,354	1,940
Deer Mountain	PNP	340	225	150	138	150	160	160	180	154	160
Farragut River	ADFG	0	0	0	0	0	0	0	0	0	0
Macaulay	PNP	1,040	1,250	630	679	650	790	542	374	875	1,140
Harding River	ADFG/USFW	0	0	0	0	0	0	0	0	0	0
Hidden Falls	PNP	1,430	1,471	1,410	1,400	1,400	1,400	1,400	1,400	1,980	1,420
L Port Walter	NMFS	1,870	2,161	630	703	703	500	0	1,000	520	400
Medvejie Creek	PNP	1,530	1,385	1,450	1,957	2,617	2,780	3,180	2,850	3,200	3,160
Neets Bay	PNP	0	0	0	0	0	0	0	0	0	0
Port Armstrong	PNP	0	0	0	0	0	0	0	180	173	230
Sheldon Jackson	PNP	120	128	150	53	240	140	40	40	71	0
Snettisham	PNP	0	0	0	0	0	0	0	0	0	0
Tamgas	MIC	1,500	1,580	850	650	780	580	850	960	1,000	640
Whitman Lake	PNP	911	1,452	2,160	2,120	1,810	1,820	1,300	1,310	1,358	1,790

Coho eggs taken at Southeast Alaska enhancement projects, 1993 - 2003

Hatchery	Agency	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Auke Creek	ADFG/NMFS	10	0	0	0	70	0	0	0	0	0
Burnett Inlet	PNP	0	0	0	0	0	2,070	2,160	2,150	2,666	2,040
Burro Creek	PNP	20	50	0	0	30	40	0	0	0	0
Crystal Lake	ADFG	470	260	200	347	230	210	210	340	372	270
Deer Mountain	PNP	160	180	190	185	200	200	160	180	194	180
Macaulay	PNP	910	1,470	1,372	876	0	1,200	862	800	897	720
Gunnuk Creek	PNP	40	40	0	0	20	50	0	65	0	0
Hidden Falls	PNP	4,140	1,700	5,010	4,716	4,590	2,330	4,690	2,130	5,357	5,490
Klawock	PNP	3,200	500	2,270	3,259	710	2,300	2,410	3,250	5,109	3,390
Medvejie Creek	PNP	2,650	3,000	3,050	3,046	3,180	220	380	270	3,009	3,050
Neets Bay	PNP	1,540	640	540	0	3,200	1,720	350	0	0	2,550
Port Armstrong	PNP	1,020	2,010	1,850	749	1,610	1,500	1,770	1,860	1,464	2,010
Sheep Creek	PNP	0	0	0	0	0	0	0	0	0	0
Sheldon Jackson	PNP	160	190	120	3	70	80	110	0	108	70
Tamgas	MIC	4,700	4,500	4,760	4,720	4,580	3,400	3,520	3,320	3,320	3,270
Whitman Lake	PNP	2,340	5,810	5,320	2,282	3,800	3,260	5,070	4,700	5,028	2,850

Chum eggs taken at Southeast Alaska enhancement projects 1994 - 2003

Hatchery	Agency	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Burnett Inlet	PNP	22,000	45,000	59,990	0	0	0	0	0	0	0
Burro Creek	PNP	10	10	140	31	10	10	0	0	0	0
Macaulay	PNP	88,110	63,160	98,400	116,740	108,130	111,050	77,309	121,060	108,940	122,580
Gunnuk Creek	PNP	20,950	43,930	51,740	66,740	54,240	73,240	71,560	54,250	44,650	70,430
Haines Projects	PNP	900	520	240	897	1,400	1,740	1,800	570	628	870
Hidden Falls	PNP	84,010	80,810	83,790	87,491	78,370	80,000	85,360	87,180	93,584	93,740
Medvejie Creek	PNP	33,810	41,600	41,600	27,544	41,550	41,330	43,890	50,500	51,000	54,990
Neets Bay	PNP	75,740	108,000	124,760	82,586	82,780	86,520	78,580	78,390	74,270	108,710
Port Armstrong	PNP	0	0	0	0	0	0	0	0	0	15,540
Port Camden	PNP	6,020	5,200	4,710	2,436	0	0	0	0	0	0
Sheep Creek	PNP	29,640	61,580	27,070	0	0	0	33,930	0	0	0
Sheldon Jackson	PNP	220	90	3,460	264	300	6,290	4,290	720	428	1,120
Tamgas	MIC	230	1,900	1,140	400	330	1,400	290	880	2,000	6,260
Whitman Lake	PNP	32,420	0	0	29,193	30,160	29,300	32,280	28,360	32,154	26,550

Sockeye eggs taken at Southeast Alaska enhancement projects 1994 - 2003

Hatchery	Agency	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Beaver Falls	PNP	4,090	2,870	1,260	0	0	0	0	0	0	0
Burnett Inlet	PNP	0	0	0	0	310	940	1,050	980	837	880
Haines Projects	PNP	600	600	620	112	460	0	0	0	0	0
Klawock	PNP	2,900	1,000	1,330	1,476	1,210	710	390	630	740	1,000
Snett/Tahltan	ADFG	0	0	0	0	0	0	0	0	0	0
Snettisham	PNP	14,490	14,490	23,750	14,605	14,250	12,080	15,890	14,070	14,189	15,530
Tamgas	MIC	0	0	0	0	0	20	70	3	50	80

Pink eggs taken at Southeast Alaska enhancement projects, 1994 - 2003

Hatchery	Agency	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Auke Creek	ADFG/NMFS	1,000	1,000	0	0	0	0	0	0	0	0
Burnett Inlet	PNP	39,980	13,100	28,720	0	0	0	0	0	0	0
Burro Creek	PNP	1,040	500	460	403	250	260	0	0	0	0
Macaulay	PNP	8,990	9,030	6,300	9,415	6,440	1,780	1,780	1,770	0	0
Gunnuk Creek	PNP	0	0	0	0	0	0	0	0	0	0
L Port Walter	NMFS	0	0	0	0	0	0	100	0	133	0
Medvejie Creek	PNP	210	190	320	224	333	220	310	270	298	310
Port Armstrong	PNP	59,450	81,360	91,290	80,072	86,620	89,080	54,600	78,910	90,366	89,550
Sheep Creek	PNP	0	0	0	0	0	0	0	0	0	0
Sheldon Jackson	PNP	10,800	8,910	12,520	5,651	10,180	6,780	5,890	90	3,249	800
Tamgas	MIC	0	0	0	0	0	0	0	0	0	0

Steelhead eggs taken at Southeast Alaska enhancement projects,1993 - 2003

Hatchery	Agency	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Crystal Lake	ADFG	0	0	0	0	0	0	0	0	0	0
Deer Mountain	PNP	10	11	10	13	10	0	9	10	0	0
Klawock	PNP	10	23	0	0	6	20	0	7	0	0
L Port Walter	NMFS	0	0	0	0	0	0	0	95	75	0

ADFG: Alaska Dept Fish & Game
PNP: Private Non-Profit
NMFS: National Marine Fishery Service
MIC: Metlakatla Indian Community

New Production

No significant new production capacity has been added to Washington Department of Fish and Wildlife operated hatchery facilities.

Loss of Production

During 2004, Federal budget reductions for the Mitchell Act mitigation program did not result in the closure of any additional facilities or program reductions in the lower Columbia River. State funded facilities and programs have been reduced and/or changed due to budget reductions and in some instances the recommendations of the Hatchery Scientific Review Group. ESA concerns, fish health policy constraints, and reductions in state funding have resulted in reductions to Chinook, coho, and steelhead production.

Trends in Production

For the short term, production levels are expected to continue on a downward trend. In recent years, budgetary issues have been the dominant factor in changing production levels. The decrease in the Mitchell Act program is the most obvious example of budget driven program changes; however, due to a continued shrinking state revenue forecast, state funding levels have been decreasing as well. The full impact of the ESA listing of salmon and steelhead are unknown at the present time; changes in hatchery operations are occurring as a result of a review by the Hatchery Scientific Review Group and the ESA. The ultimate level of the Washington Department of Fish and Wildlife's annual fish production program is unknown.

Size criteria used for class designations in WDFW data

Species	Unfed fry	Fed fry	Fry	Zero	Fingerling	Yearling	Smolt
Chinook	>900		>150, <=900	>20, <=150		<=20	
Coho	>900		>200, <=900		>20, <=200	<=20	
Chum	>1000	<=1000					
Pink			>=50				
Sockeye	>1500				>20, <800		
Steelhead		>150			>20, <=150	>10, <=20	<=10

WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year							
									"Preliminary"	"Incomplete"
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
ALLISON SPRINGS HAT.	Chinook	Zero	23,260							
ALLISON SPRINGS HAT.	Chinook	Yearling		12,000						
ARLINGTON HATCHERY	Steelhead	Fry			57,240					
ARLINGTON HATCHERY	Steelhead	Fingerling				53,424			14,329	
BAKER SP BEACHES 3+4	Sockeye	Unfed fry	2,331,507	1,910,687	1,383,550	1,807,417	4,416,875	52,202	2,047,967	
BAKER SP BEACHES 3+4	Sockeye	Fingerling					206,674			
BARNABY HATCHERY	Steelhead	Smolt	119,315	190,000	180,000	195,000	175,000	200,000	185,000	
BEAVER CR HATCHERY	Chinook	Zero	1,096,198		841,515					
BEAVER CR HATCHERY	Coho	Yearling					230,420			
BEAVER CR HATCHERY	Steelhead	Fingerling				102,275				
BEAVER CR HATCHERY	Steelhead	Yearling				39,177	9,800			
BEAVER CR HATCHERY	Steelhead	Smolt	260,860	229,854	222,085	164,650	34,848	51,200		
BINGHAM CR HATCHERY	Coho	Unfed fry	959,800							
BINGHAM CR HATCHERY	Coho	Fry							1,000	
BINGHAM CR HATCHERY	Coho	Fingerling			614,100		516,500	121,800		
BINGHAM CR HATCHERY	Coho	Yearling	354,900	674,400	697,300	688,700	829,278	634,800		
BINGHAM CR HATCHERY	Steelhead	Fry		9,700			10,200			
BINGHAM CR HATCHERY	Steelhead	Fingerling		30,000		34,100	97,300	58,100	50,000	50,000
BINGHAM CR HATCHERY	Steelhead	Yearling		30,000		62,800				
BINGHAM CR HATCHERY	Steelhead	Smolt	29,200	37,000	40,700		116,100	57,600	57,000	
BOGACHIEL HATCHERY	Steelhead	Fry			83,300		398,100	186,800		30,743
BOGACHIEL HATCHERY	Steelhead	Smolt	271,200	290,872	290,046	286,800	563,214			241,190
CARLTON REARING POND	Chinook	Yearling	298,844	384,909	205,269	424,363	336,762			
CEDAR RIVER HATCHERY	Sockeye	Unfed fry	14,048,000	9,955,300	9,636,000	3,244,000	17,149,000	12,532,000	15,977,000	
CHAMBERS CR HATCHERY	Chinook	Zero	409,870	536,561	500,732			544,930	557,108	
CHAMBERS CR HATCHERY	Chinook	Yearling	88,665	95,491	86,201	89,011	81,567	85,708		

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year							
									"Preliminary"	"Incomplete"
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
CHELAN PUD HATCHERY	Steelhead	Smolt			80,183					
CHIWAWA HATCHERY	Chinook	Yearling	15,176	266,148	75,906		47,104	377,544		
CHIWAWA HATCHERY	Steelhead	Smolt		12,927	159,151	99,601	184,639	212,542		
CHIWAWA HATCHERY	Sockeye	Yearling							112,419	
COTTONWOOD CR POND	Steelhead	Smolt	250,262	252,211	268,803	274,146	215,584	182,722	236,627	
COULTER CR HATCHERY	Chinook	Zero	1,230,000	1,337,000	1,294,000	996,000	1,103,000			
COUNTY LINE PONDS	Chinook	Zero	23,500	202,136		194,590				
COWLITZ SALMON HATCH	Chinook	Unfed fry						522,828		
COWLITZ SALMON HATCH	Chinook	Zero	7,869,534	5,945,600	4,003,717	5,585,066	5,975,811	5,303,871	5,215,558	
COWLITZ SALMON HATCH	Chinook	Yearling	1,118,154	1,080,962	948,987	898,662	847,987	866,468		
COWLITZ SALMON HATCH	Chum				5,000					
COWLITZ SALMON HATCH	Coho	Unfed fry	2,834,287	875,000	4,035,000	635,900	1,511,300	572,216		
COWLITZ SALMON HATCH	Coho	Fry			119,364		115,430			
COWLITZ SALMON HATCH	Coho	Fingerling	1,446,992	540,700	476,542	15,430	480,935		425,655	
COWLITZ SALMON HATCH	Coho	Yearling	3,699,868	3,966,721	4,158,752	4,195,758	2,967,544	2,874,425		
COWLITZ SALMON HATCH	Steelhead	Fingerling						550		
COWLITZ SALMON HATCH	Steelhead	Yearling		28,913						
COWLITZ SALMON HATCH	Steelhead	Smolt	149,948	119,875	149,495	149,881	150,138	30,609		
COWLITZ TROUT HATCH	Chinook	Yearling					46,848			
COWLITZ TROUT HATCH	Steelhead	Fry		122,640	47,864	253,896	5,002	370,031		
COWLITZ TROUT HATCH	Steelhead	Fingerling	518,512	768,255	383,908	246,194	117,685	641,808	524,301	299,642
COWLITZ TROUT HATCH	Steelhead	Yearling	80,413	128,403	240,858	85,510	60,321	40,248	185,980	
COWLITZ TROUT HATCH	Steelhead	Smolt	1,109,469	1,064,379	1,042,430	1,289,957	1,510,437	1,221,784	550,650	

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year							
									Preliminary	*Incomplete*
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
CURL LK IMPRINT POND	Chinook	Yearling	49,790							
CURL LK IMPRINT POND	Steelhead	Yearling	19,319							
CURL LK IMPRINT POND	Steelhead	Smolt	110,005							
DAYTON ACCLIMA. POND	Steelhead	Smolt	142,824	125,127	124,651	124,654	102,765	125,114	100,445	
DEEP R NP - LOWER	Chinook	Yearling				159,565	95,940	33,113		
DEEP R NP - LOWER	Coho	Yearling		210,824	217,732	166,087	125,056	129,545		
DEEP R NP - UPPER	Chinook	Yearling	56,414	39,678						
DEEP R NP - UPPER	Coho	Yearling	208,350	203,284	213,411	229,250	229,501	236,890		
DRYDEN POND	Chinook	Yearling	600,127	391,686	649,612	1,005,554	804,501	453,862		
DUNGENESS HATCHERY	Chinook	Fry	1,578,236	1,158,828	1,049,600	697,342	887,380	831,100		
DUNGENESS HATCHERY	Chinook	Zero	196,300	891,067	725,552	803,774	1,197,400	309,300	369,414	
DUNGENESS HATCHERY	Chinook	Yearling						107,450		
DUNGENESS HATCHERY	Coho	Fry				2,000	2,000	2,000		
DUNGENESS HATCHERY	Coho	Fingerling								
DUNGENESS HATCHERY	Coho	Yearling	877,300	788,600	865,700	548,700	563,404	505,750	2,000	
DUNGENESS HATCHERY	Steelhead	Yearling		1,690						
DUNGENESS HATCHERY	Steelhead	Smolt	9,800	9,000	11,000	10,465	12,199	10,250	13,715	
EASTBANK HATCHERY	Chinook	Yearling		46,537			124,995	150,806		
EASTBANK HATCHERY	Steelhead	Smolt	162,693	284,042		76,100				
EASTBANK HATCHERY	Sockeye	Fingerling							98,509	
EELLS SPRINGS	Steelhead	Fry		5,508						
EELLS SPRINGS	Steelhead	Smolt	14,688	82,667	69,714	84,960	85,560	90,896	78,368	

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year							
									"Preliminary"	"Incomplete"
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
ELOCHOMAN HATCHERY	Chinook	Fry		168,277						
ELOCHOMAN HATCHERY	Chinook	Zero	3,241,061	2,087,800	1,206,100	1,105,000	1,992,000	2,017,700	2,055,000	
ELOCHOMAN HATCHERY	Coho	Fingerling			324,800		154,600	113,700		
ELOCHOMAN HATCHERY	Coho	Yearling	1,440,931	695,187	512,000	909,125	767,463	926,827		
ELOCHOMAN HATCHERY	Steelhead	Smolt				132,415	74,450	55,574	126,001	
ELWHA HATCHERY	Chinook	Zero	2,375,000	2,176,000	4,025,000	1,803,000	2,583,000	3,962,493	3,965,000	
ELWHA HATCHERY	Chinook	Yearling						1,500		
ELWHA HATCHERY	Coho	Yearling				294,400				
ELWHA HATCHERY	Steelhead	Smolt	66,320		59,850	59,300		151,700	99,600	
FALLERT CR HATCHERY	Chinook	Fry	73,800	247,065						
FALLERT CR HATCHERY	Chinook	Zero	2,133,060	1,407,880	1,693,170	1,829,932	2,545,260	2,433,562	2,381,626	
FALLERT CR HATCHERY	Chinook	Yearling	384,137	310,500	401,650	375,886	95,506	251,220		
FALLERT CR HATCHERY	Coho	Fry		77,200						
FALLERT CR HATCHERY	Coho	Fingerling			97,800					
FALLERT CR HATCHERY	Coho	Yearling	545,860	411,380	525,000	354,750	379,052	384,155		
FALLERT CR HATCHERY	Steelhead	Smolt		59,389	69,196	30,291	75,195		45,579	
FIDALGO BAY NET PENS	Chinook	Yearling	57,410	56,000						
FIDALGO BAY NET PENS	Coho	Yearling		149,950						
FORKS CREEK HATCHERY	Chinook	Zero	2,322,700	2,157,800	2,170,698	2,193,289	1,903,600	1,856,200	2,065,100	
FORKS CREEK HATCHERY	Chum	Fed Fry							45,500	
FORKS CREEK HATCHERY	Coho	Fingerling	20,000							
FORKS CREEK HATCHERY	Coho	Yearling	618,904	648,529	637,400	625,500	570,697	547,700		
FORKS CREEK HATCHERY	Steelhead	Fry					46,500			258,000
FORKS CREEK HATCHERY	Steelhead	Smolt	30,900	58,300	42,800	57,600	138,600		71,000	
FOX ISLAND NET PENS	Chinook	Yearling	252,600	246,785	249,010	228,750				
FOX ISLAND NET PENS	Coho	Yearling	59,795	49,473	53,935	56,750				

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year						"Preliminary"	"Incomplete"
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
GARRISON HATCHERY	Chinook	Fry						368,548		
GARRISON HATCHERY	Chinook	Zero	455,740	328,675	631,075	840,128	646,435	262,692	244,940	
GARRISON HATCHERY	Chum	Unfed fry			25,000					
GARRISON HATCHERY	Coho	Unfed fry		23,500						
GEORGE ADAMS HATCHRY	Chinook	Unfed fry		491,700						
GEORGE ADAMS HATCHRY	Chinook	Fry	1,955,600							
GEORGE ADAMS HATCHRY	Chinook	Zero	1,811,338	3,865,355	3,468,321	3,779,853	3,835,620	3,914,325	3,806,706	
GEORGE ADAMS HATCHRY	Chum	Fed fry	4,502,816	4,516,743	5,265,437	4,974,495	1,276,957	4,978,784	4,858,788	
GEORGE ADAMS HATCHRY	Chum	Unfed fry	681,620							
GEORGE ADAMS HATCHRY	Coho	Yearling	527,317	534,554	502,266	493,992	500,732	336,526		
GOBAR POND (27)	Chinook	Yearling		87,500						
GOBAR POND (27)	Steelhead	Smolt			750			91,398		
GRAYS RIVER HATCHERY	Chinook	Zero	1,204,150							
GRAYS RIVER HATCHERY	Chinook	Yearling						108,791		
GRAYS RIVER HATCHERY	Chum	Fed fry	7,075		103,711	134,661	202,833	305,185	398,000	
GRAYS RIVER HATCHERY	Coho	Yearling	158,045	213,696	148,563	160,549	154,107	153,000		
GRAYS RIVER HATCHERY	Steelhead	Smolt	47,000	42,675	27,247	43,561		41,000	43,770	
HOODSPORT HATCHERY	Chinook	Zero	4,355,973	3,168,896	3,025,396	3,110,853	3,059,892	2,930,377	3,047,111	
HOODSPORT HATCHERY	Chinook	Yearling	257,799	249,797	268,611	247,931	295,788	227,008		
HOODSPORT HATCHERY	Chum	Fed fry	9,549,440	11,004,717	15,630,297	14,938,521	10,383,154	15,428,043	14,829,075	
HOODSPORT HATCHERY	Pink	Fry		4,952,700		1,402,740		1,167,675		
HUMPTULIPS HATCHERY	Chinook	Zero	237,435	540,700	437,000	385,100	259,425	228,385	535,750	
HUMPTULIPS HATCHERY	Coho	Fingerling		279,000	100,000	100,000	560			
HUMPTULIPS HATCHERY	Coho	Yearling	1,481,200	1,330,000	1,530,000	1,655,590	1,202,119	1,696,350	591,183	
HUMPTULIPS HATCHERY	Steelhead	Fingerling			31,500					
HUMPTULIPS HATCHERY	Steelhead	Yearling			12,000					
HUMPTULIPS HATCHERY	Steelhead	Smolt	173,200	193,600	158,800	190,800	152,185	81,300	44,025	

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year							
									Preliminary	*Incomplete*
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
HUPP SPRINGS REARING	Chinook	Fry	25,900							
HUPP SPRINGS REARING	Chinook	Zero	254,990	254,562	202,508	250,022	242,327	250,750	260,120	
HUPP SPRINGS REARING	Chinook	Yearling	84,506	84,539	90,575	90,337	89,900	95,070		
HURD CR HATCHERY	Chinook	Zero	1,878							
HURD CR HATCHERY	Chinook	Yearling		56,465			103,260	111,844		
HURD CR HATCHERY	Coho	Unfed fry				37,360			25,824	
HURD CR HATCHERY	Coho	Fingerling			14,702	9,000	16,998	9,170		
HURD CR HATCHERY	Coho	Yearling				8,754		8,100		
HURD CR HATCHERY	Pink	Fry		31,330				102,600		
ICY CR HATCHERY	Chinook	Yearling	312,299	303,245	146,610	241,300	309,000	324,000		
ICY CR HATCHERY	Steelhead	Smolt			13,465			40,000	10,200	
ISSAQUAH HATCHERY	Chinook	Unfed fry		387,100						
ISSAQUAH HATCHERY	Chinook	Fry		296,700						
ISSAQUAH HATCHERY	Chinook	Zero	1,694,052	2,042,400	2,172,100	1,522,377	2,194,773	1,861,500	2,237,792	
ISSAQUAH HATCHERY	Coho	Unfed fry	770,800	495,800			1,744,949			
ISSAQUAH HATCHERY	Coho	Fry	1,297,544	719,367	935,345					
ISSAQUAH HATCHERY	Coho	Fingerling	79,900							
ISSAQUAH HATCHERY	Coho	Yearling	405,400	409,000	545,000	505,600	514,800	535,900		
ISSAQUAH HATCHERY	Steelhead	Fry			13,000	8,413				
ISSAQUAH HATCHERY	Steelhead	Fingerling			8,643				752	
ISSAQUAH HATCHERY	Steelhead	Yearling		12,836						
ISSAQUAH HATCHERY	Steelhead	Smolt			12,350	14,330				

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year							
									Preliminary	*Incomplete*
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
KALAMA FALLS HATCHRY	Chinook	Unfed fry	828,700	539,300						
KALAMA FALLS HATCHRY	Chinook	Fry	150,000							
KALAMA FALLS HATCHRY	Chinook	Zero	3,682,600	2,286,900	2,533,235	1,972,100	2,608,918	2,565,346	2,545,640	
KALAMA FALLS HATCHRY	Chinook	Yearling			123,281	125,000	235,437	209,867		
KALAMA FALLS HATCHRY	Coho	Unfed fry		30,000						
KALAMA FALLS HATCHRY	Coho	Fingerling		232,400						
KALAMA FALLS HATCHRY	Coho	Yearling	1,017,600	921,040	752,365	358,500	353,429	385,125		
KALAMA FALLS HATCHRY	Steelhead	Fry							12,692	
KALAMA FALLS HATCHRY	Steelhead	Fingerling						18,300		
KALAMA FALLS HATCHRY	Steelhead	Yearling					8,302			
KALAMA FALLS HATCHRY	Steelhead	Smolt	115,100	58,000	85,450	173,257	117,022	29,718	84,345	
KENDALL CR HATCHERY	Chinook	Zero	1,898,653	1,778,903	2,303,700	1,712,800	1,647,300	1,745,300	778,400	
KENDALL CR HATCHERY	Chinook	Yearling	187,636							
KENDALL CR HATCHERY	Chum	Unfed fry							980,000	
KENDALL CR HATCHERY	Chum	Fed fry	31,879	225,418	350,000		140,000	500,000		
KENDALL CR HATCHERY	Chum	Fry				377,000				
KENDALL CR HATCHERY	Coho	Fingerling		145,000						
KENDALL CR HATCHERY	Coho	Yearling	298,268	320,000	278,500	316,800	313,000	300,500		
KENDALL CR HATCHERY	Steelhead	Smolt			33,900	35,000	30,500	34,800	160,000	
KENDALL CR HATCHERY	Steelhead	Fry								20,000
KLICKITAT HATCHERY	Chinook	Unfed fry		854,700						
KLICKITAT HATCHERY	Chinook	Zero	4,008,370	4,387,480	4,329,700	4,163,342	3,850,300	4,192,198	4,470,500	
KLICKITAT HATCHERY	Chinook	Yearling	584,500	538,000	562,000	615,000	605,000	607,500		
KLICKITAT HATCHERY	Coho	Fingerling							30,537	
KLICKITAT HATCHERY	Coho	Yearling	1,130,000	1,100,000	1,419,999	1,296,000	1,025,000	998,900		

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year						"Preliminary"	"Incomplete"
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
LAKEWOOD HATCHERY	Chinook	Fry						64,720		
LAKEWOOD HATCHERY	Chinook	Yearling			205,878	186,356	185,387	194,000		
LAKEWOOD HATCHERY	Coho	Unfed fry	2,500							
LAKEWOOD HATCHERY	Steelhead	Fry			416,574	29,608				
LAKEWOOD HATCHERY	Steelhead	Fingerling		14,805	13,200					
LAKEWOOD HATCHERY	Steelhead	Yearling			11,494					
LEWIS RIVER HATCHERY	Chinook	Yearling	952,441	740,585	901,371	785,357	864,905	780,402		
LEWIS RIVER HATCHERY	Coho	Unfed fry		1,417,005	1,359,588		100,266			
LEWIS RIVER HATCHERY	Coho	Fry				158,846	100,399			
LEWIS RIVER HATCHERY	Coho	Fingerling		116,955	329,200	277,566			305,640	
LEWIS RIVER HATCHERY	Coho	Yearling	3,234,761	3,096,101	3,077,950	1,777,794	1,729,227			
LEWIS RIVER HATCHERY	Steelhead	Smolt			59,843	71,354				
LK ABERDEEN HATCHERY	Chinook	Zero	68,000	60,925	57,418	50,000	50,000	51,000	50,000	
LK ABERDEEN HATCHERY	Coho	Fry				80,500	500		1,000	
LK ABERDEEN HATCHERY	Coho	Fingerling							20,000	
LK ABERDEEN HATCHERY	Coho	Yearling	32,539	15,600	34,431	79,000	50,000	27,000		
LK ABERDEEN HATCHERY	Steelhead	Fry		51,250						
LK ABERDEEN HATCHERY	Steelhead	Fingerling		61,700			62,100			10,000
LK ABERDEEN HATCHERY	Steelhead	Smolt	257,320	289,282	264,502	297,789	288,930	281,820	35,045	
LYONS FERRY HATCHERY	Chinook	Fry						20,592		
LYONS FERRY HATCHERY	Chinook	Unfed fry							33,505	
LYONS FERRY HATCHERY	Chinook	Zero			204,194	196,643	203,970	269,257	300,111	
LYONS FERRY HATCHERY	Chinook	Yearling	418,992	432,166	456,401	338,757	432,511	518,436		
LYONS FERRY HATCHERY	Steelhead	Fry				17,885	42,548		105,502	39,928
LYONS FERRY HATCHERY	Steelhead	Fingerling	191,100	205,469	164,833	205,719		24,948		30,527
LYONS FERRY HATCHERY	Steelhead	Yearling					9,047			
LYONS FERRY HATCHERY	Steelhead	Smolt	368,629	444,137	443,081	371,210	356,631	343,175	309,912	

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year						"Preliminary"	"Incomplete"
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
MARBLEMOUNT HATCHERY	Chinook	Fry			6,350			172,700	34,319	
MARBLEMOUNT HATCHERY	Chinook	Zero	130,500	272,429	487,834	294,305	638,069	443,420	454,175	
MARBLEMOUNT HATCHERY	Chinook	Yearling	115,465	142,380	135,300	147,393	148,450	150,728		
MARBLEMOUNT HATCHERY	Coho	Fry		14,800						
MARBLEMOUNT HATCHERY	Coho	Fingerling		106,000	116,720	112,000		105,000		
MARBLEMOUNT HATCHERY	Coho	Yearling	259,100	251,235	249,600	251,900	252,600	265,584		
MARBLEMOUNT HATCHERY	Steelhead	Fry			12,300					
MARBLEMOUNT HATCHERY	Steelhead	Fingerling			100,000	3,600				
MARBLEMOUNT HATCHERY	Steelhead	Smolt	207,509	412,181	238,623	285,300	266,680	200,010	328,330	
MCALLISTER HATCHERY	Chinook	Unfed fry	740,000							
MCALLISTER HATCHERY	Chinook	Zero	1,080,000	1,199,875	1,173,400	1,096,500	872,900	1,206,175		
MCALLISTER HATCHERY	Chinook	Yearling	235,000	402,690	316,350	130,000	385,749			
MCKERNAN HATCHERY	Chinook	Unfed fry		736,100						
MCKERNAN HATCHERY	Chinook	Fry	249,600							
MCKERNAN HATCHERY	Chinook	Zero		54,000		75,175				
MCKERNAN HATCHERY	Chinook	Yearling						84,150		
MCKERNAN HATCHERY	Chum	Fed fry	10,655,110	8,823,475	9,969,350	7,764,900	1,327,160	9,921,609	9,706,524	
MERWIN HATCHERY	Steelhead	Fry		80,476						
MERWIN HATCHERY	Steelhead	Fingerling	45,418	64,181	122,343	160,689	204,602		216,940	
MERWIN HATCHERY	Steelhead	Yearling		4,160						
MERWIN HATCHERY	Steelhead	Smolt	297,719	255,076	347,390	273,696	370,981	189,936	285,320	
METHOW HATCHERY	Chinook	Unfed fry		40,807				128,399	639,204	143,237
METHOW HATCHERY	Chinook	Zero						57,471		
METHOW HATCHERY	Chinook	Yearling	371,306	491,957	451,140	248,183	342,096	640,766		

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year							
									"Preliminary"	"Incomplete"
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
MINTER HATCHERY	Chinook	Unfed fry	414,000		25,748					
MINTER HATCHERY	Chinook	Zero	1,919,800	2,069,000	2,066,000	1,975,600	1,844,650	1,892,500	1,876,675	
MINTER HATCHERY	Chinook	Yearling	77,800	15,100						
MINTER HATCHERY	Chum		2,243,500	2,066,000	2,005,000	2,091,000	2,368,300	794,950		
MINTER HATCHERY	Chum	Unfed fry				80,000			592,000	
MINTER HATCHERY	Coho	Unfed fry	129,000	277,000	8,000					
MINTER HATCHERY	Coho	Fry	999,444	1,000,000	187,900					
MINTER HATCHERY	Coho	Fingerling	628,300	319,500			659,130	109,350		
MINTER HATCHERY	Coho	Yearling	1,059,655	1,468,050	1,508,400	1,389,325	1,103,650	1,031,525		
MINTER HATCHERY	Pink	Fry		51,575		5,150		18,511		
NASELLE HATCHERY	Chinook	Zero	5,735,000	5,360,000	2,790,000	1,117,700	4,338,700	3,883,300	2,788,000	
NASELLE HATCHERY	Coho	Fry	218,000							
NASELLE HATCHERY	Coho	Yearling	1,015,000	1,081,600	987,100	1,016,500	1,174,835	364,738		
NASELLE HATCHERY	Steelhead	Yearling					176,200			58,300
NASELLE HATCHERY	Steelhead	Smolt	50,000	38,200	14,500	27,100	62,000		56,000	
NEMAH HATCHERY	Chinook	Zero	2,636,800	2,565,200	1,247,500	716,900	1,305,600	1,839,600	1,910,700	
NEMAH HATCHERY	Chum		37,700			152,500				
NEMAH HATCHERY	Coho	Fry	142,700							
NEMAH HATCHERY	Coho	Yearling	492,600	574,000	538,000	508,100	562,800	396,800		
NEMAH HATCHERY	Steelhead	Smolt	9,901	11,300	9,900	11,400	11,650	6,900	20,250	
NORTH TOUTLE HATCHRY	Chinook	Zero	2,631,598	2,566,600	2,613,678	2,344,441	695,443	1,361,143	2,593,342	
NORTH TOUTLE HATCHRY	Chinook	Yearling	100,798	99,289		86,601	106,586			
NORTH TOUTLE HATCHRY	Coho	Yearling	1,119,800	984,011	821,606	394,117	1,701,685	808,100		
NORTH TOUTLE HATCHRY	Steelhead	Smolt	64,036	50,767	73,683	29,735	23,730	49,812	48,125	
PALMER HATCHERY	Steelhead	Fry		13,464						
PALMER HATCHERY	Steelhead	Smolt	262,300	219,684	196,179	305,565	199,578	101,620	136,515	

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year						"Preliminary"	"Incomplete"
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
PERCIVAL COVE NET PN	Chinook	Zero	1,538,500	1,048,760	1,470,925		613,800	591,000		
PERCIVAL COVE NET PN	Chinook	Yearling	190,985	191,300						
PRIEST RAPIDS HATCH.	Chinook	Zero	6,644,100	6,737,600	6,504,800	6,856,000	6,862,550	6,779,035	6,777,605	
PRIEST RAPIDS HATCH.	Chinook	Yearling		4,480						
PUYALLUP HATCHERY	Chinook	Yearling			76,500					
PUYALLUP HATCHERY	Steelhead	Fry		66,000		370,000	133,000			
PUYALLUP HATCHERY	Steelhead	Fingerling	23,700	7,500	88,500					
PUYALLUP HATCHERY	Steelhead	Smolt	179,008	29,600	18,210	25,000	31,000	25,000	27,000	
REITER PONDS	Steelhead	Fingerling						21,450		
REITER PONDS	Steelhead	Yearling			10,000					
REITER PONDS	Steelhead	Smolt	237,882	555,662	139,919	749,487	440,234	472,615	392,073	
RINGOLD SPRINGS HATC	Chinook	Zero	4,062,997	3,491,207	3,484,000	3,436,897	2,974,905	2,283,020	3,322,946	
RINGOLD SPRINGS HATC	Chinook	Yearling	400,000	1,275,000	391,816					
RINGOLD SPRINGS HATC	Steelhead	Smolt	157,896	200,000	181,000	181,000	210,000	164,556	171,645	
SAMISH HATCHERY	Chinook	Zero	5,199,600	5,273,481	4,659,198	4,700,495	3,742,277	3,068,176	3,155,083	
SAMISH HATCHERY	Chinook	Yearling	108,616	98,212	67,210	83,683	81,366	88,664		
SIMILKAMEEN HATCHERY	Chinook	Zero					532,453			
SIMILKAMEEN HATCHERY	Chinook	Yearling	507,913	589,591	293,064	630,463		26,642		
SIMILKAMEEN HATCHERY	Steelhead	Smolt	49,800	49,901						
SKAMANIA HATCHERY	Steelhead	Fingerling		38,602						
SKAMANIA HATCHERY	Steelhead	Smolt	464,257	581,623	648,431	572,225	451,573	384,482	446,485	107
SKOOKUMCHUCK DAM	Coho	Yearling	98,600							
SKOOKUMCHUCK HATCHRY	Coho	Yearling		101,080	103,605	70,126	111,376	105,338		
SKOOKUMCHUCK HATCHRY	Coho	Smolt							21,787	

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year							
									Preliminary	*Incomplete*
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
SNIDER CR REARING PD	Steelhead	Yearling							50,000	
SNIDER CR REARING PD	Steelhead	Smolt	51,900	100,500	53,000	59,800				
SOLDUC HATCHERY	Chinook	Unfed fry	122,300							
SOLDUC HATCHERY	Chinook	Yearling	233,000	217,200	225,500	215,000	218,700	216,750		
SOLDUC HATCHERY	Coho	Unfed fry	177,700	258,800						
SOLDUC HATCHERY	Coho	Fingerling		43,300						
SOLDUC HATCHERY	Coho	Yearling	872,090	798,400	829,000	799,500	811,100	773,059		
SOLDUC HATCHERY	Steelhead	Fry	122,100							
SOLDUC HATCHERY	Steelhead	Smolt					60,000	67,000		
SOOS CREEK HATCHERY	Chinook	Unfed fry	1,459,200	350,000						
SOOS CREEK HATCHERY	Chinook	Fry	725,600	303,066		414,800				
SOOS CREEK HATCHERY	Chinook	Zero	3,231,100	3,266,300	3,532,100	3,096,413	3,395,665	3,502,054	3,036,900	
SOOS CREEK HATCHERY	Chinook	Yearling			149,500					
SOOS CREEK HATCHERY	Coho	Fry	248,100	301,015	328,176		349,872	297,258	279,500	
SOOS CREEK HATCHERY	Coho	Fingerling			315,900					
SOOS CREEK HATCHERY	Coho	Yearling	555,800	589,500	572,153	601,556	629,745	356,396		
SOOS CREEK HATCHERY	Steelhead	Fry							15,030	
SOOS CREEK HATCHERY	Steelhead	Smolt						33,700	68,600	
SOUTH SOUND NET PENS	Chinook	Yearling	114,700	149,950	160,500					
SOUTH SOUND NET PENS	Coho	Fingerling					45,500			
SOUTH SOUND NET PENS	Coho	Yearling	2,506,700	1,983,775	2,270,700	1,343,573	1,672,494	1,657,957		

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year							
									Preliminary	*Incomplete*
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
SPEELYAI HATCHERY	Chinook	Unfed fry			580,817	30,741				
SPEELYAI HATCHERY	Chinook	Fry			76,301					
SPEELYAI HATCHERY	Chinook	Zero			83,405		290,100	59,936		
SPEELYAI HATCHERY	Chinook	Yearling				352,727				
SPEELYAI HATCHERY	Coho	Unfed fry			385,000	72,000				
SPEELYAI HATCHERY	Coho	Fry			177,072		10,380		7,000	
SPEELYAI HATCHERY	Coho	Fingerling					4,397	11,305	3,005	
SPEELYAI HATCHERY	Coho	Yearling	145,350		444,406		15,718	10,125		
SPEELYAI HATCHERY	Steelhead	Fingerling				86,073				
SPEELYAI HATCHERY	Steelhead	Smolt				37,724	62,174	58,245	58,030	
STEAMBOAT SL NETPENS	Coho	Yearling		210,530	193,543	208,966	273,108	239,635		
SUND ROCK HATCHERY	Chinook	Yearling	106,150	148,000						
TOKUL CR HATCHERY	Coho	Unfed fry				400,100				
TOKUL CR HATCHERY	Coho	Fingerling		105,570						
TOKUL CR HATCHERY	Steelhead	Smolt	137,030	229,868	162,412	195,931	203,215	195,517	193,474	
TUCANNON HATCHERY	Chinook	Yearling	28,488	24,186	127,939	97,600	105,154	287,318		
TUCANNON HATCHERY	Steelhead	Smolt					60,020	58,616	43,688	
TUMWATER FALLS HATCH	Chinook	Fry		1,320,975						
TUMWATER FALLS HATCH	Chinook	Zero	470,000	860,950	1,511,350	3,924,127	3,199,200	3,563,000	3,932,589	
TUMWATER FALLS HATCH	Chinook	Yearling			188,980	180,000	228,800	154,000		
TUMWATER FALLS HATCH	Steelhead	Smolt	18,020	22,760	26,911	13,511				
TURTLE ROCK HATCHERY	Chinook	Zero	862,515	1,029,540	609,348	716,972	1,054,194	1,715,503		
TURTLE ROCK HATCHERY	Chinook	Yearling	202,727	202,989	217,319	285,707	279,969	314,584		
TURTLE ROCK HATCHERY	Steelhead	Smolt	186,900	141,323	110,713			123,391	302,060	

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year						"Preliminary"	"Incomplete"
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
VANCOUVER HATCHERY	Steelhead	Fry			276,019			58,503		
VANCOUVER HATCHERY	Steelhead	Fingerling		90,380			19,148			
VANCOUVER HATCHERY	Steelhead	Smolt	107,468							
VOIGHTS CR HATCHERY	Chinook	Zero	1,504,000	1,597,000	1,794,000	1,724,100	1,611,800	1,641,000	1,654,000	
VOIGHTS CR HATCHERY	Coho	Fry	275,000			144,400				
VOIGHTS CR HATCHERY	Coho	Fingerling		674,000			136,600			
VOIGHTS CR HATCHERY	Coho	Yearling	995,500	565,000	1,127,426	1,194,826	1,191,300	793,000		
VOIGHTS CR HATCHERY	Pink	Fry				6,500				
VOIGHTS CR HATCHERY	Steelhead	Smolt	56,500	193,900	180,000	178,600	176,300	211,300	200,000	
WALLACE R HATCHERY	Chinook	Fry		286,750						
WALLACE R HATCHERY	Chinook	Zero	2,230,000	1,197,500	1,366,649	835,000	1,223,194	795,123	1,026,559	
WALLACE R HATCHERY	Chinook	Yearling	530,000	394,000	554,000	500,000	218,000	250,000		
WALLACE R HATCHERY	Coho	Unfed fry	635,900	103,500						
WALLACE R HATCHERY	Coho	Fry			17,000	20,000				
WALLACE R HATCHERY	Coho	Fingerling	160							
WALLACE R HATCHERY	Coho	Yearling	300,000	302,005	373,045	155,345	149,334	142,765		
WALLACE R HATCHERY	Steelhead	Fingerling			124,440					
WALLACE R HATCHERY	Steelhead	Smolt			14,760	35,800		20,000	19,700	
WASHOUGAL HATCHERY	Chinook	Unfed fry		49,600	599,928					
WASHOUGAL HATCHERY	Chinook	Fry		365,600						
WASHOUGAL HATCHERY	Chinook	Zero	6,282,000	4,190,536	4,289,000	3,413,264	3,717,874	4,144,650	3,948,490	
WASHOUGAL HATCHERY	Chinook	Yearling	8,000							
WASHOUGAL HATCHERY	Coho	Unfed fry			337,600					
WASHOUGAL HATCHERY	Coho	Fry		486,675						
WASHOUGAL HATCHERY	Coho	Fingerling						2,554,300		
WASHOUGAL HATCHERY	Coho	Yearling	2,942,343	3,025,249	2,764,436	3,272,409	2,992,786	508,650		
WASHOUGAL HATCHERY	Steelhead	Smolt				16,975				

CONTINUED, WDFW RELEASES, BY FACILITY, RELEASE STAGE, AND BROOD YEAR, 1996-2003

			Brood Year							
Facility	**Species**	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**"Preliminary" 2002**	**"Incomplete" 2003**
WELLS HATCHERY	Chinook	Zero	473,000	541,923	370,617	363,600	498,500		473,101	
WELLS HATCHERY	Chinook	Yearling	450,970	504,523	547,910	405,468	434,974	617,302		
WELLS HATCHERY	Steelhead	Yearling					14,175			
WELLS HATCHERY	Steelhead	Smolt	377,900	493,026	769,026	621,530	540,865	390,965	450,758	
WENATCHEE NET PENS	Sockeye	Fingerling	284,630	197,195	121,344	84,466	92,055	96,486	104,855	
WENATCHEE NET PENS	Sockeye	Yearling				83,489	98,119	104,452		
WHITEHORSE POND	Chinook	Zero	218,092	47,639	190,654	172,350	192,789	162,970	121,078	
WHITEHORSE POND	Steelhead	Fry		4,737						
WHITEHORSE POND	Steelhead	Smolt	160,413	217,671	140,418	178,072	224,912	212,142	217,590	

Size criteria used for class designations in WDFW data

Species	Unfed fry	Fed fry	Fry	Zero	Fingerling	Yearling	Smolt
Chinook	>900		>150, <=900	>20, <=150		<=20	
Coho	>900		>200, <=900		>20, <=200	<=20	
Chum	>1000	<=1000					
Pink			>=50				
Sockeye	>1500				>20, <800		
Steelhead		>150			>20, <=150	>10, <=20	<=10

Total WDFW Hatchery releases by species, release stage, and brood year, 1996-2003

		Brood Year							
								"Preliminary"	"Incomplete"
Species	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Chinook	Unfed fry	3,564,200	3,449,307	1,206,493	30,741		651,227	4,637,709	143,237
Chinook	Fry	4,758,736	4,147,261	1,132,251	1,112,142	887,380	1,457,660	34,319	
Chinook	Zero	87,443,264	78,826,180	76,069,589	69,353,708	75,503,694	73,688,262	67,992,119	
Chinook	Yearling	9,501,408	10,373,840	9,274,390	9,174,654	8,152,242	8,335,493		
Chum	Unfed fry	681,620		25,000	80,000			1,572,000	
Chum	Fed fry	27,027,520	26,636,353	33,328,795	30,056,077	15,698,404	31,928,571	29,837,887	
Chum	Fry				377,000				
Coho	Unfed fry	5,509,987	3,480,605	6,125,188	1,145,360	3,356,515	572,216	25,824	
Coho	Fry	3,180,788	2,599,057	1,764,857	405,746	578,581	299,258	288,500	
Coho	Fingerling	2,175,352	2,562,425	2,389,764	513,996	2,015,220	3,024,625	784,837	
Coho	Yearling	28,453,576	27,672,774	28,953,324	25,927,842	25,147,360	18,135,165	593,183	
Pink	Fry		5,035,605		1,414,390		1,288,786		
Sockeye	Unfed fry	16,379,507	11,865,987	11,019,550	5,051,417	21,565,875	12,584,202	18,024,967	
Sockeye	Fingerling	284,630	197,195	121,344	84,466	298,729	96,486	203,364	
Sockeye	Yearling				83,489	98,119	104,452	112,419	
Steelhead	Fry	122,100	353,775	906,297	679,802	635,350	615,334	133,224	348,671
Steelhead	Fingerling	778,730	1,280,892	1,037,367	892,074	500,835	765,156	806,322	390,169
Steelhead	Yearling	99,732	206,002	274,352	187,487	277,845	40,248	235,980	58,300
Steelhead	Smolt	6,765,172	7,646,379	7,234,567	8,031,572	7,778,909	6,299,009	5,738,712	241,297
Total		196,726,322	186,333,637	180,863,128	154,601,963	162,495,058	159,886,150	131,021,366	1,181,674

Summary of brood year releases by species from WDFW, 1996-2003

	Brood Year							
	1996	1997	1998	1999	2000	2001	"Preliminary" 2002	"Incomplete" 2003
Spring Chinook	8,939,084	10,928,379	10,038,543	8,145,452	8,487,459	8,496,787	2,587,511	143,237
Summer Chinook	5,287,688	5,255,473	3,969,998	5,534,067	5,906,081	4,925,445	1,820,940	
Fall Chinook	91,040,836	80,612,736	73,674,182	65,991,726	70,149,776	70,710,410	68,255,696	
Coho	39,319,703	36,314,861	39,233,133	27,992,944	31,097,676	22,031,264	1,692,344	
Sockeye	16,664,137	12,063,182	11,140,894	5,219,372	21,962,723	12,785,140	18,340,750	
Chum	27,709,140	26,636,353	33,353,795	30,513,077	15,698,404	31,928,571	31,409,887	
Pink		5,035,605		1,414,390		1,288,786		
Steelhead	7,765,734	9,487,048	9,452,583	9,790,935	9,192,939	7,719,747	6,914,238	1,038,437
Totals	196,726,322	186,333,637	180,863,128	154,601,963	162,495,058	159,886,150	131,021,366	1,181,674

WDFW Cooperative project releases by species, release stage, and brood year, 1996-2003

		Brood Year							
								"Preliminary"	"Incomplete"
Species	**Class**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Chinook	Unfed fry	876,500	455,445	132,100			50,000	210,000	
Chinook	Fry	629,600	1,053,120	25,800		150,854		19,618	
Chinook	Zero	2,065,948	3,132,162	1,579,000	619,167	175,000	492,500	526,728	
Chinook	Yearling	477,882	476,131	201,943	215,141	422,409	247,749	200,000	
Chum	Unfed fry	990,635	2,124,558	4,980,150	1,987,685	397,100	1,958,740	768,047	900,000
Chum	Fed fry	2,576,588	2,556,411	2,566,493	1,048,415	1,601,261	2,831,840	1,813,763	96,000
Chum	Fry				248		50,000		
Coho	Unfed fry	748,193	881,463	1,320,768	96,897	25,501	702,000	1,350,773	
Coho	Fry	131,560	433,601	304,300	141,440	64,544	264,500	284,400	31,000
Coho	Zero	129,933							
Coho	Fingerling	105,882	387,379	342,566	40,000	34,375	453,551	162,900	
Coho	Yearling	1,235,820	994,852	845,449	857,051	753,797	1,278,815	420,000	
Pink	Fry		1,561		218,000				
Sockeye	Fingerling		22,541						
Sockeye	Yearling		4,945						
Steelhead	Fry					2		5,000	
Steelhead	Fingerling		50,176	1,400				81,900	
Steelhead	Yearling			499	850	424			
Steelhead	Smolt	130,517	283,877	122,747	157,320	87,032	156,679	116,043	
Totals		10,099,058	12,858,222	12,423,215	5,382,214	3,712,299	8,486,374	5,959,172	1,027,000

Adult spring chinook escapement at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
KENDALL CR HATCHERY	1,070	1,663	1,370	2,873	2,050	5,365	5,652	5,052
MARBLEMOUNT HATCHERY	856	1,220	1,054	3,171	1,102	1,566	1,663	1,547
MINTER HATCHERY	604	383	400	565	634	492	400	
HUPP SPRINGS REARING	611	487						508
HOODSPORT HATCHERY	118	61	1					
DUNGENESS HATCHERY					3	57	14	20
HURD CR HATCHERY	850	1,605						
SOLDUC HATCHERY	226	198	247	519	271	971	831	1,250
ELOCHOMAN HATCHERY					1	29		105
COWLITZ SALMON HATCH	1,869	1,298	812	1,321	1,408	1,306	3,135	11,043
NORTH TOUTLE HATCHRY			1					
KALAMA FALLS HATCHRY	188	468	364	757	988	834	1,473	3,881
FALLERT CR HATCHERY				5				
LEWIS RIVER HATCHERY	1,054	2,245	1,188	846	777	1,178	1,869	3,037
KLICKITAT HATCHERY	550	829	321	475	965	409	1,234	1,683
LYONS FERRY HATCHERY				579	512			
TUCANNON HATCHERY	121	256	77	96	76	585	755	215
RINGOLD SPRINGS HATC	607	952	1,010	691	503	1,724	212	23
PRIEST RAPIDS HATCH.	167							
EASTBANK HATCHERY	12	42	101	33	61		76	265
CHIWAWA HATCHERY	53	77	48	1	53	501	272	105
METHOW HATCHERY	399	322	410	300	577	851	1,585	256
TOTAL	9,355	12,106	7,404	12,232	9,981	15,868	19,171	28,990

Adult summer chinook escapement at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
MARBLEMOUNT HATCHERY	1,123	78	91	77	97	76	82	100
WHITEHORSE POND	8	11						
SUNSET FALLS FCF	116	210	86	70				
WALLACE R HATCHERY	1,555	923	1,073	1,723	3,403	2,723	2,542	5,655
EASTBANK HATCHERY	933	233	1,548	765	1,345	1,559	1,918	3,339
WELLS HATCHERY	1,382	1,767	1,766	1,753	1,290	1,379	1,301	1,280
TOTAL	5,117	3,222	4,564	4,388	6,135	5,737	5,843	10,374

Adult fall chinook escapement at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
KENDALL CR HATCHERY	614	1,457	1,519	176	25		125	61
WHATCOM CR HATCHERY			929				379	
GLENWOOD SPRINGS	500				93	863	852	212
SAMISH HATCHERY	8,875	16,863	8,726	6,786	3,707	14,417	15,083	10,055
MARBLEMOUNT HATCHERY	161			15	88	74	19	198
SUNSET FALLS FCF	638	489	464	456				
TOKUL CR HATCHERY					90	146	122	107
WALLACE R HATCHERY	4,043	2,512	3,618	4,700	1,931	871	24	
ISSAQUAH HATCHERY	1,246	3,815	4,855	2,189	3,676	10,451	5,620	5,742
CEDAR RIVER HATCHERY		53	222	46	10	129	59	61
SOOS CREEK HATCHERY	13,414	12,053	9,378	10,577	5,929	11,728	10,446	6,567
VOIGHTS CR HATCHERY	3,000	3,419	3,484	3,464	1,591	2,572	2,948	1,997
MCALLISTER HATCHERY	1,950	718	2,097	2,126	2,250	2,716		
GARRISON HATCHERY	947	1,453	1,560	648	336	629	720	816
TUMWATER FALLS HATCH	18,687	5,920	5,161	7,160	5,671	5,622	8,487	7,619
COULTER CR HATCHERY	2,225	1,580	1,500	1,000				
MINTER HATCHERY	288	3,462	8,039	10,343	6,170	10,951	9,294	4,987
GEORGE ADAMS HATCHRY	3,100	1,885	5,584	8,235	4,031	8,816	9,394	10,022
HOODSPORT HATCHERY	4,001	5,409	7,851	10,125	4,785	4,225	4,056	3,621
ELWHA HATCHERY	1,380	938	1,676	726	1,244	1,672	1,558	1,258
SHALE CR HATCHERY	162							
HUMPTULIPS HATCHERY	195	320	298	260	169	175	405	617
LK ABERDEEN HATCHERY	419	145	393	60	55	60	301	136
BINGHAM CR HATCHERY	192	62	137	109	30	4		56
SATSOP SPRINGS PONDS	214	40	153					
BINGHAM CR TRAP	88							
ELK CREEK TRAP							1	
FORKS CREEK HATCHERY	4,548	2,028	2,208	1,998	2,306	3,150	4,513	4,163
NEMAH HATCHERY	1,310	1,724	1,118	988	932	1,660	1,549	2,421
NASELLE HATCHERY	2,077	2,815	1,351	1,914	1,325	1,984	2,844	1,001

Adult fall chinook escapement at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
SEA RESOURCES HATCH	1,310							
GRAYS RIVER HATCHERY	157	32	255	111	73	10		11
ELOCHOMAN HATCHERY	4,825	3,397	1,440	3,041	1,763	3,885	2,619	3,344
COWLITZ TROUT HATCH		2		11	5	14	3	22
COWLITZ SALMON HATCH	6,686	2,751	2,842	3,108	3,029	7,930	9,269	6,836
NORTH TOUTLE FCF	1		7		6			26
NORTH TOUTLE HATCHRY	3,417	3,250	1,040	1,076	1,617	4,995	6,126	10,155
KALAMA FALLS HATCHRY	8,118	2,302	6,307	1,779	2,815	5,634	6,897	6,790
FALLERT CR HATCHERY	1,899	695	375	474	96	572	418	171
LEWIS RIVER HATCHERY	9	6	324	300	336	1,103	657	913
WASHOUGAL HATCHERY	10,180	6,121	3,768	1,598	1,969	7,324	7,549	9,640
LYONS FERRY HATCHERY	1,303	1,190	2,976	3,416	3,513	5,081	4,860	3,317
RINGOLD SPRINGS HATC	597	965	331	3,076		1,761	1,369	1,021
PRIEST RAPIDS HATCH.	14,280	10,836	15,074	23,101	7,235	14,538	12,002	8,926
TOTAL	127,056	100,707	107,060	115,192	68,901	135,762	130,568	112,889

Adult coho escapement at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
KENDALL CR HATCHERY	15,409	12,521	7,083	2,561	3,100	8,002	7,477	4,627
WHATCOM CR HATCHERY			118					
GLENWOOD SPRINGS					400	340	9	
SAMISH HATCHERY	1,518	5,621	1,477	453	4,745	5,413	351	6,271
MARBLEMOUNT HATCHERY	16,253	3,136	9,355	2,702	11,110	11,658	16,271	4,072
SUNSET FALLS FCF	17,615	15,190	21,681	12,824				
TOKUL CR HATCHERY			10	10	24			
WALLACE R HATCHERY	17,610	19,112	17,678	8,312	26,213	31,658	11,755	13,047
ISSAQUAH HATCHERY	15,032	7,961	3,384	2,963	27,225	35,259	1,284	5,593
CEDAR RIVER HATCHERY		36	30	10	27	33	29	24
SOOS CREEK HATCHERY	14,958	7,490	8,964	8,200	43,774	25,600	46,432	31,142
VOIGHTS CR HATCHERY	50,649	18,452	8,297	9,005	39,394	34,298	48,756	38,590
MCALLISTER HATCHERY						120		
GARRISON HATCHERY	859	3,845	1,359		41	355	187	691
LAKEWOOD HATCHERY		802				2		
TUMWATER FALLS HATCH	511							
COULTER CR HATCHERY		41						
MINTER HATCHERY	16,074	19,874	9,363	2,539	15,433	16,579	14,746	12,227
GEORGE ADAMS HATCHRY	15,541	12,041	2,793	7,334	9,465	23,015	25,595	16,718
HOODSPORT HATCHERY	3,652	375	117	55	48	1,013	184	17
DUNGENESS HATCHERY	5,149	12,234	3,667	2,446	17,351	18,871	4,388	13,185
ELWHA HATCHERY						29	2,302	
SOLDUC HATCHERY	15,120	4,154	15,960	21,038	16,417	36,704	32,926	19,037
SHALE CR HATCHERY	448							
HUMPTULIPS HATCHERY	27,521	7,000	7,971	14,789	11,940	31,292	10,361	31,229
LK ABERDEEN HATCHERY	310	113	327	508	420	2,830	4,094	7,809
BINGHAM CR HATCHERY	19,696	3,452	7,527	8,308	11,367	37,454	31,008	26,797
SATSOP SPRINGS PONDS	5,888	2,081	1,539					
SKOOKUMCHUCK HATCHRY					17			
ELK CREEK TRAP						3,079	3,812	130

Adult coho escapement at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
ONALASKA HS(ONALASK					976	1,160	1,286	
FORKS CREEK HATCHERY	8,771	2,953	2,417	9,224	15,601	17,475	16,030	18,438
NEMAH HATCHERY	22,231	2,336	3,173	4,742	8,943	21,732	10,309	16,683
NASELLE HATCHERY	17,811	1,225	1,175	4,772	3,285	9,846	16,427	26,194
SEA RESOURCES HATCH	7							
GRAYS RIVER HATCHERY	1,240	659	72	710	12,842	7,130	613	828
ELOCHOMAN HATCHERY	1,253	601	650	4,825	11,726	19,198	12,118	10,902
BEAVER CR HATCHERY			27					
COWLITZ TROUT HATCH		124	65	82	160	362	53	112
COWLITZ SALMON HATCH	11,352	15,570	18,648	40,329	50,697	79,390	85,632	39,775
NORTH TOUTLE FCF		165	172	92			373	616
NORTH TOUTLE HATCHRY	15,023	8,234	14,469	12,416	29,388	15,697	22,045	32,055
KALAMA FALLS HATCHRY	233	278	1,912	2,929	8,124	20,489	5,851	5,991
FALLERT CR HATCHERY	1,055	1,068	2,796	4,892	2,701	11,945	4,158	3,268
LEWIS RIVER HATCHERY	10,075	18,514	17,959	32,686	40,137	99,656	18,804	45,086
MERWIN DAM FCF							4,824	15,179
WASHOUGAL HATCHERY	1,085	2,111	2,071	3,121	8,372	21,594	19,281	6,085
LYONS FERRY HATCHERY		3	2	21	21	2	4	89
RINGOLD SPRINGS HATC			4					27
EASTBANK HATCHERY							187	2,637
TOTAL	349,949	209,372	194,312	224,898	431,484	649,280	479,962	455,171

Adult chum escapement at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
KENDALL CR HATCHERY	46	293	2,239	1,439	317	3,957	2,270	4,528
WHATCOM CR HATCHERY			24,893					
SAMISH HATCHERY	29	36	248					
SUNSET FALLS FCF	214	22	28	45				
ISSAQUAH HATCHERY				1				
SOOS CREEK HATCHERY	11		19				24	189
GARRISON HATCHERY	2,310	734	2,176	274	359	2,821	1,736	593
TUMWATER FALLS HATCH	120							
COULTER CR HATCHERY	916	203						
MINTER HATCHERY	28,505	9,746	44,658	18,425	24,973	23,218	52,205	41,751
GEORGE ADAMS HATCHRY	15,369	7,181	26,172	4,620	1,589	36,962	48,200	82,501
MCKERNAN HATCHERY	32,768	12,519	38,812	9,772	2,158	45,424	39,432	61,129
HOODSPORT HATCHERY	93,755	40,697	52,600	25,710	20,501	59,976	94,539	27,843
LK ABERDEEN HATCHERY	71	102	145				109	51
BINGHAM CR HATCHERY				73		145	796	546
BINGHAM CR TRAP	2							
FORKS CREEK HATCHERY							253	218
NEMAH HATCHERY	523	636	1,217	427	203	542	237	232
NASELLE HATCHERY	19	22	87	146	48	39	542	
SEA RESOURCES HATCH	266							
GRAYS RIVER HATCHERY	10		410	578	254	362	310	308
COWLITZ TROUT HATCH		6	11					
COWLITZ SALMON HATCH	8	21	6	3	18	2		12
LEWIS RIVER HATCHERY						1		
MERWIN HATCHERY				1				
WASHOUGAL HATCHERY							184	74
TOTAL	174,942	72,218	193,721	61,514	50,420	173,449	240,837	219,975

Adult sockeye escapement at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
WHATCOM CR HATCHERY								
BAKER SP BEACHES 3+4	3,810	2,989	3,170	3,511	10,303	4,945	3,958	19,487
BAKER RIVER TRAP								
SUNSET FALLS FCF	10	14	19	4				
ISSAQUAH HATCHERY	984	103	194	35	8,466	853	51	75
CEDAR RIVER HATCHERY	9,589	10,638	17,279	2,701	18,674	10,092	16,259	9,154
GARRISON HATCHERY	3		5					
TUMWATER FALLS HATCH	9							
COULTER CR HATCHERY		6						
MINTER HATCHERY		11	2				1	
DUNGENESS HATCHERY								
LK ABERDEEN HATCHERY			1		3			
SEA RESOURCES HATCH								
COWLITZ SALMON HATCH	4	18	7	3		22		11
NORTH TOUTLE FCF	3							
NORTH TOUTLE HATCHRY	1					2		
LEWIS RIVER HATCHERY							7	
WENATCHEE NET PENS	852	300	733	213	531		1,736	260
CHIWAWA HATCHERY					1,092	1,107	1	417
TOTAL	15,265	14,079	21,410	6,467	39,069	17,021	22,013	29,404

Adult pink escapement at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
KENDALL CR HATCHERY						57		
SUNSET FALLS FCF		1,988		962				
WALLACE R HATCHERY				655				
CEDAR RIVER HATCHERY		5				2		
VOIGHTS CR HATCHERY				12		2		
GARRISON HATCHERY	1					1		3
MINTER HATCHERY		86		13		46		68
HOODSPORT HATCHERY		13,264		7,639		71,539		25,217
DUNGENESS HATCHERY		171				899		121
LK ABERDEEN HATCHERY	2							1
COWLITZ SALMON HATCH				2				
TOTAL	3	15,514		9,283		72,546		25,410

Spring chinook eggs taken at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
KENDALL CR HATCHERY	888,500	1,614,000	1,888,125	1,937,500	2,303,000	1,956,000	878,000	870,000
MARBLEMOUNT HATCHERY	1,037,978	798,800	563,400	1,013,340	774,000	607,300	699,530	585,700
HUPP SPRINGS REARING	1,088,000	1,085,000	318,000	536,000	555,000	621,000	521,000	484,000
HOODSPORT HATCHERY	173,200							
DUNGENESS HATCHERY						1,596,000		
HURD CR HATCHERY	2,070,000	2,900,000						
SOLDUC HATCHERY	352,500	217,000	262,000	255,000	247,700	238,000	240,980	297,800
COWLITZ SALMON HATCH	2,856,000	2,320,500	1,221,009	2,290,700	2,248,605	2,272,881	1,871,400	1,691,600
KALAMA FALLS HATCHRY	111,700	589,800	238,400	630,652	584,600	609,151	596,173	630,400
SPEELYAI HATCHERY	1,612,000	1,696,000	1,990,000	1,460,000	1,584,600	1,656,000	1,326,200	1,638,459
KLICKITAT HATCHERY	1,100,000	1,700,000	640,000	860,000	1,379,200	920,000	1,600,000	1,048,000
LYONS FERRY HATCHERY	1,486,700	1,653,800	1,774,500	1,944,044	1,124,500	184,127	169,364	111,000
EASTBANK HATCHERY	18,000	307,500	126,000		49,500	1,059,500	185,100	155,500
METHOW HATCHERY	624,400	728,000	774,000	607,500	773,800	844,500	1,373,032	376,000
TOTAL	13,418,978	15,610,400	9,795,434	11,534,736	11,624,505	12,564,459	9,460,779	7,888,459

Summer chinook eggs taken at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
MARBLEMOUNT HATCHERY	248,437	244,500	268,335	221,178	239,530	228,050	231,300	260,800
WALLACE R HATCHERY	1,915,000	1,695,000	1,264,500	1,685,000	2,045,000	1,420,000	2,114,000	3,604,300
EASTBANK HATCHERY	1,678,000	1,581,500	1,621,000	2,263,500	2,078,800	1,495,200	2,120,000	2,022,500
WELLS HATCHERY	2,580,000	2,817,600	2,685,000	2,475,000	2,780,000	2,620,000	2,850,000	2,850,000
TOTAL	6,421,437	6,338,600	5,838,835	6,644,678	7,143,330	5,763,250	7,315,300	8,737,600

Fall chinook eggs taken at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
KENDALL CR HATCHERY	1,059,800	1,527,000	2,386,000	140,000	50,000			80,000
WHATCOM CR HATCHERY			346,775					
GLENWOOD SPRINGS	1,250,000				130,000	1,612,800	782,061	364,400
SAMISH HATCHERY	10,646,900	11,208,800	9,133,200	7,337,800	6,119,200	7,117,900	7,279,700	6,004,000
MARBLEMOUNT HATCHERY				36,075	175,765	196,700	37,600	262,500
WALLACE R HATCHERY	3,520,000	2,050,000	1,812,000	2,046,000	2,000,000	562,500	52,800	
ISSAQUAH HATCHERY	1,240,000	2,829,000	2,894,000	2,394,500	2,454,000	2,766,000	2,608,000	2,480,000
SOOS CREEK HATCHERY	6,635,000	7,178,200	4,876,700	4,805,000	4,664,800	4,722,000	4,554,000	5,147,000
VOIGHTS CR HATCHERY	3,128,000	2,319,000	2,509,000	2,444,000	2,264,400	2,295,000	2,332,000	2,284,000
MCALLISTER HATCHERY	1,815,500	572,000	1,345,000	1,690,000	2,659,000	2,544,000		
GARRISON HATCHERY	1,529,300	727,500	2,534,810	1,249,000	523,600	641,700	903,975	1,260,000
TUMWATER FALLS HATCH	8,080,522	6,728,000	4,604,000	5,636,700	4,863,000	5,109,000	5,314,500	5,142,525
COULTER CR HATCHERY	2,794,000	786,000	624,000	980,000				
MINTER HATCHERY	380,000	1,570,000	6,472,000	2,988,000	4,660,000	2,667,700	2,439,600	2,680,700
GEORGE ADAMS HATCHRY	5,281,600	2,814,000	3,002,000	4,500,000	4,349,900	5,668,100	4,629,000	4,583,800
HOODSPORT HATCHERY	5,426,600	8,293,800	6,661,400	3,322,000	3,990,000	2,303,150	3,637,405	3,487,913
ELWHA HATCHERY	2,060,000	2,102,000	4,499,000	1,789,350	3,156,500	4,445,200	4,325,700	3,493,600
SHALE CR HATCHERY	297,500							
HUMPTULIPS HATCHERY	270,700	673,650	616,000	437,000	262,000	196,000	592,000	599,400
LK ABERDEEN HATCHERY	120,000	71,000	83,000	97,500	117,000	103,500	148,000	108,000
BINGHAM CR HATCHERY	120,200	118,000	16,000					
SATSOP SPRINGS PONDS	459,000	92,000	332,000					
FORKS CREEK HATCHERY	8,602,000	3,601,000	3,578,000	2,507,000	4,001,000	4,448,000	3,105,700	2,887,000
NEMAH HATCHERY	1,834,000	3,242,000	1,561,000	921,000	1,605,300	1,644,000	1,460,460	2,929,000
NASELLE HATCHERY	2,800,000	6,743,000	2,000,000	1,417,000	2,747,000	2,459,000	3,359,000	1,080,000
SEA RESOURCES HATCH	2,177,900							
GRAYS RIVER HATCHERY	511,900	32,600	242,500					
ELOCHOMAN HATCHERY	3,502,600	2,108,200	2,649,225	3,774,600	2,957,300	2,230,000	2,334,800	2,284,000
COWLITZ SALMON HATCH	9,162,000	6,381,000	4,556,705	6,809,000	7,020,758	6,715,365	6,476,300	5,461,200
NORTH TOUTLE HATCHRY	2,965,000	2,905,392	2,327,568	1,899,040	779,494	2,908,300	2,944,000	2,426,000
KALAMA FALLS HATCHRY	6,057,600	4,472,600	4,733,134	3,919,073	5,624,715	5,736,556	5,676,255	5,262,005
FALLERT CR HATCHERY	947,600	741,240	123,000	238,796	87,200			
WASHOUGAL HATCHERY	8,620,000	5,065,000	6,777,400	2,645,000	4,011,200	5,593,500	4,700,000	4,700,000
LYONS FERRY HATCHERY	1,695,700		2,410,000	3,980,445	3,667,300	4,589,517	4,627,000	2,887,200
PRIEST RAPIDS HATCH.	15,079,000	16,229,000	14,186,000	15,993,600	13,955,000	10,750,000	13,732,550	13,500,000
TOTAL	120,069,922	103,180,982	99,891,417	85,997,479	88,895,432	90,025,488	88,052,406	81,394,243

Coho eggs taken at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
KENDALL CR HATCHERY	2,148,000	1,452,500	1,242,000	700,000	710,000	650,000	705,000	700,000
WHATCOM CR HATCHERY			32,200					
GLENWOOD SPRINGS					120,000	650,000		
SAMISH HATCHERY	85,000	62,500	2,000	2,000	2,000			
MARBLEMOUNT HATCHERY	1,743,060	1,436,400	671,800	961,760	1,041,370	984,000	624,000	524,700
WALLACE R HATCHERY	6,176,500	5,880,800	5,195,182	4,270,250	3,475,000	1,020,000	4,945,000	3,495,354
ISSAQUAH HATCHERY	4,173,800	3,422,000	2,946,900	2,828,000	3,566,660	2,011,000	552,000	1,833,000
SOOS CREEK HATCHERY	2,862,000	3,178,000	3,338,000	2,939,800	2,906,000	2,356,000	4,033,600	3,097,000
VOIGHTS CR HATCHERY	2,205,500	2,014,000	1,993,200	1,803,400	1,945,300	1,428,700	1,240,000	1,370,000
MINTER HATCHERY	5,328,000	4,728,000	4,300,000	1,648,000	3,930,000	4,086,200	4,763,100	2,653,400
GEORGE ADAMS HATCHRY	755,000	663,500	820,000	590,000	712,400	588,700	589,500	602,400
DUNGENESS HATCHERY	1,002,000	906,000	1,006,500	661,000	623,200	622,500	615,600	620,600
SOLDUC HATCHERY	1,050,000	1,200,000	1,179,400	960,000	941,000	1,154,000	943,000	895,000
SHALE CR HATCHERY	194,000							
HUMPTULIPS HATCHERY	3,922,000	2,783,000	3,302,000	2,511,000	2,404,000	2,480,000	1,900,000	2,479,100
LK ABERDEEN HATCHERY	58,000	120,000	204,000	252,500	249,000	204,000	273,000	252,000
BINGHAM CR HATCHERY	4,578,400	3,409,000	3,265,000	3,246,600	2,850,500	2,283,300	2,455,400	2,892,800
SATSOP SPRINGS PONDS	1,636,700	664,000						
FORKS CREEK HATCHERY	2,190,000	1,323,000	1,290,000	2,145,000	1,246,000	1,193,000	1,543,500	1,585,000
NEMAH HATCHERY	940,000	570,000	1,343,000	572,000	780,000	562,000	941,975	1,129,000
NASELLE HATCHERY	1,509,000	1,079,500	847,000	1,242,000	1,412,400	1,678,200	1,951,600	1,112,000
SEA RESOURCES HATCH	12,000							
GRAYS RIVER HATCHERY	1,339,800	634,000	81,000	292,112	1,007,485	1,107,000	300,000	456,000
ELOCHOMAN HATCHERY	345,200	352,300	649,500	1,951,000	1,672,000	1,448,000	1,241,260	1,091,600
COWLITZ SALMON HATCH	10,007,500	8,133,500	12,816,424	9,174,000	7,149,425	6,819,786	5,488,600	4,328,600
NORTH TOUTLE HATCHRY	2,709,000	1,715,614	2,340,676	2,015,370	1,850,812	1,672,000	2,061,000	996,000
KALAMA FALLS HATCHRY	65,300	215,800	253,298	162,496	564,746	522,000	428,614	459,490
FALLERT CR HATCHERY	796,500	938,300	1,602,000	2,499,700	470,300	486,405	427,960	407,128
LEWIS RIVER HATCHERY	6,542,500	8,970,000	6,298,000	4,967,200	3,474,000	1,386,000	1,752,000	2,790,000
SPEELYAI HATCHERY	2,164,200	3,239,600	3,463,000	3,213,400	2,307,000	1,362,800	1,227,000	1,921,600
WASHOUGAL HATCHERY	1,035,000	1,662,000	3,591,400	3,187,000	4,202,400	4,787,100	4,859,000	3,730,000
TOTAL	67,573,960	60,753,314	64,073,480	54,795,588	51,612,998	43,542,691	45,861,709	41,421,772

Chum eggs taken at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
KENDALL CR HATCHERY	26,500	249,400	1,932,000	1,239,000	272,000	2,657,000	2,200,000	2,110,000
WHATCOM CR HATCHERY			6,480,000					
SAMISH HATCHERY	20,000							
GARRISON HATCHERY	71,505	103,000	64,000	50,000	67,000			
MINTER HATCHERY	5,089,000	3,788,000	4,923,000	4,916,000	4,736,000	3,051,000	3,089,000	4,527,000
GEORGE ADAMS HATCHRY	8,212,000	7,074,000	11,306,000	5,573,500	1,422,500	16,209,200	12,213,700	12,026,600
MCKERNAN HATCHERY	16,863,000	11,972,000	16,851,000	11,874,000	1,376,900	10,537,600	12,650,700	14,214,700
HOODSPORT HATCHERY	5,567,500	8,588,800	7,142,000	16,713,000	14,996,721	7,290,000	7,400,000	7,109,878
BINGHAM CR HATCHERY							25,000	
FORKS CREEK HATCHERY							323,900	216,000
NEMAH HATCHERY	111,500	196,000	556,000	271,000	152,200	264,800	202,900	102,000
SEA RESOURCES HATCH	264,500							
GRAYS RIVER HATCHERY	8,573		126,178	212,681		407,408	416,000	392,000
COWLITZ TROUT HATCH			3,500					
COWLITZ SALMON HATCH			8,770					
WASHOUGAL HATCHERY							243,119	87,898
TOTAL	36,234,078	31,971,200	49,392,448	40,849,181	23,023,321	40,417,008	38,764,319	40,786,076

Sockeye eggs taken at Washington Department of Fish and Wildlife enhancement projects, 1996 - 2003.

Facility Name	1996	1997	1998	1999	2000	2001	2002	Preliminary 2003
BAKER SP BEACHES 3+4							784,823	702,744
CEDAR RIVER HATCHERY	14,718,000	10,736,000	10,520,000	3,090,000	17,171,000	12,113,000	17,044,000	10,423,000
WENATCHEE NET PENS	299,475	234,000	128,800	191,700	195,500	234,600	301,000	210,300
TOTAL	15,017,475	10,970,000	10,648,800	3,281,700	17,366,500	12,347,600	18,129,823	11,336,044

TREATY TRIBES OF WESTERN WASHINGTON
Reported by: The Northwest Indian Fisheries Commission

New Production

No new tribal facilities went into operation in 2003. Overall hatchery production was very similar to last year. There were strong adult returns to hatcheries resulting in most programs meeting eggtake goals.

Loss of Production

There were no significant losses in tribal production in 2003.

Trends in Production

Trends in tribal fish production are listed in Table 1. Beginning in 1985, tribal production consistently resulted in releases of salmon and steelhead in excess of 40 million fish. Release year 2002 marked a return to a trend of releases in excess of 40 million after 2 years of reduced quantities of salmon being released. Production trends are not anticipated to increase beyond current levels. Currently it is believed that marine conditions are favorable for salmon survival in Western Washington. This should hopefully result in an adequate number of adults returning to tribal hatcheries to meet eggtake goals.

Table 1. Hatchery Releases for Western Washington Tribes (1,000's of fish). Release numbers include tribal cooperative projects with state, federal and private organizations.

Release Year	Fall Chinook	Spring Summer Chinook	Sub-yearling Coho	Yearling Coho	Chum	Pink	Sockeye	Sub-yearling Steelhead	Yearling Steelhead	Total
1987	11,080	133	2,594	6,957	23,470	0	12	932	978	46,246
1988	13,094	476	1,699	8,150	21,092	882	133	577	905	47,008
1989	12,102	682	2,364	8,033	20,221	0	200	398	872	44,872
1990	14,212	659	1,269	7,693	14,981	110	0	353	821	40,098
1991	15,465	446	2,194	9,458	14,887	0	12	769	903	44,134
1992	12,847	1,105	3,800	11,589	12,417	46	48	339	686	42,877
1993	10,459	900	2,781	8,635	14,167	0	46	144	1,190	38,322
1994	12,125	1,282	1,385	8,444	14,257	0	171	159	847	38,670
1995	14,758	1,376	633	11,243	19,474	0	57	411	1,011	48,963
1996	16,041	1,077	534	9,611	12,595	200	69	1,162	171	41,460
1997	15,203	1,217	1,523	9,449	11,104	0	266	275	916	39,957
1998	13,252	1,898	627	12,278	11,425	45	188	366	866	40,925
1999	12,510	1,498	741	10,495	16,050	0	69	208	978	42,549
2000	12,569	1,752	560	9,869	7,392	34	258	152	922	33,508
2001	9,471	1,637	524	7,544	9,019	0	1,126	122	776	30,218
2002	12,501	2,232	978	8,453	15,067	0	1,255	198	721	41,494
2003	10,426	2,067	578	9,162	17,889	0	880	331	712	42,045

WESTERN WASHINGTON TREATY RELEASES BY FACILITY, RELEASE STAGE AND BROOD YEAR

Size Criteria for Release Stage , fish per pound (fpp)

Species	Fed fry	Fingerling	Yearling
Chinook	>150, <=900	>20, <=150	<=20
Coho		>20, <=900	<=20
Chum	<=1000		
Pink	>=50		
Sockeye		>20, <800	
Steelhead	>150	>20, <=150	<=20

			Brood Year							
Facility	Species	Class	1995	1996	1997	1998	1999	2000	2001	*incomplete 2002
Agate Pass Seapens	Coho	Yearling	578,178	542,307	544,734	272,940	199,421	322,746		
Brownsville Net Pens	Coho	Yearling				272,918				
Baker Committee	Sock	Fingerling	998,588							
Battle Creek Pond	Chum	Fed-fry	4,950,000	4,450,000	4,400,000	6,250,000	1,786,000	4,450,000	6,574,000	8,210,000
Battle Creek Pond	Coho	Yearling		171,000						
Battle Creek Pond	Spr Chin	Yearling	30,497	40,700	55,636	45,780	38,600			
Bernie Kai-Kai Gobin Hatchery	Coho	Yearling	316,668	620,000	1,015,000	894,780	900,000	275,000	368,404	
Bernie Kai-Kai Gobin Hatchery	Fall Chin	Fingerling	1,860,000	1,900,000	1,700,000	1,690,000	1,940,000	1,225,000	1,146,751	1,250,558
Bernie Kai-Kai Gobin Hatchery	Sum Chin	Fingerling				117,315	185,200	195,000	189,019	188,100
Chalaat Creek	Steel	Yearling	100,000	100,000					53,571	51,596
Clear Creek Hatchery	Fall Chin	Fingerling	51,870	49,956	50,271	55,354	55,296	55,082	50,721	52,132
Cowling Creek	Chum	Fed-fry	555,484	458,650	615,952	1,433,485	503,863	1,380,324	998,349	979,288
Cowling Creek	Chum	Unfed-fry					750,957		370,388	
Diru Creek	Chum	Fed-fry	1,229,960	507,000	990,690	1,927,970	1,295,738	1,774,280	2,135,125	2,029,430
Diru Creek	Chum	Unfed-fry		728,328						355,790
Diru Creek	Fall Chin	Fingerling	1,008,200	395,000	380,594	231,163	82,150	110,100	127,169	134,500
Diru Creek	Fall Chin	Yearling								
Diru Creek	Steel	Fingerling	19,400				169,500	82,051		
Diru Creek	Steel	Yearling	71,395	63,249	67,200	42,116	19,980			
Educket Creek	Coho	Yearling	45,644	42,374	29,992	43,340	34,950	51,214	42,380	

WESTERN WASHINGTON TREATY RELEASES BY FACILITY, RELEASE STAGE AND BROOD YEAR

Facility	Species	Class	1995	1996	1997	1998	1999	2000	2001	*incomplete 2002
Educket Creek	Fall Chin	Fingerling			508,015	67,827			99,962	99,840
Educket Creek	Steel	Yearling	24,982	25,000	25,977	19,994	17,280	19,980	48,900	20,300
Enetai Creek	Chum	Fed-fry	1,943,779	1,054,284	1,938,078	1,547,163	667,153	233,200	2,138,098	2,789,663
Enetai Creek	Fall Chin	Fingerling	618,481	331,855	615,263	424,537				
Gorst Hatchery	Fall Chin	Fingerling	1,708,088	1,832,033	1,848,191	1,995,302	2,156,395	1,288,847	2,265,549	1,953,526
Gorst Hatchery	Fall Chin	Yearling		125,682	145,458	96,009	110,052	106,139	13,000	
Grovers Creek	Coho	Fingerling	44,092	25,653		23,460		29,688	31,924	29,172
Grovers Creek	Coho	Unfed-fry								
Grovers Creek	Fall Chin	Fingerling	563,320	590,949	508,565	579,481	858,696	452,102	671,424	406,589
Grovers Creek	Fall Chin	Unfed-fry				643,412				
Harvey Creek Hatchery	Chum	Fed-fry			36,700	1,207,302	430,097	362,000	547,943	511,199
Harvey Creek Hatchery	Coho	Fingerling								
Harvey Creek Hatchery	Coho	Yearling					6,000	9,683	6,000	
Harvey Creek Hatchery	Steel	Yearling	33,700	19,316	17,955	20,443	8,076	16,750		
Harvey Creek Hatchery	Sum Chin	Fingerling								
Harvey Creek Hatchery	Sum Chin	Yearling								
Hoko Falls	Chum	Fed-fry								
Hoko Falls	Fall Chin	Fingerling	319,352	82,736	239,800	186,390	279,281	149,634	181,789	377,684
Hoko Falls	Steel	Fed-fry					25,228			
Hoko Falls	Steel	Fingerling	22,158					10,030		
Hoko Falls	Steel	Yearling	42,876	56,589	46,602	44,425	32,382	44,957	36,125	24,524
Kalama Creek	Chum	Eggs								
Kalama Creek	Chum	Unfed-fry		180,968						
Kalama Creek	Coho	Fingerling				246,619				
Kalama Creek	Coho	Yearling	46,018	421,000	215,648	295,004		398,200	396,711	
Kalama Creek	Fall Chin	Fingerling	589,900	1,102,000	553,000	1,199,757	1,089,381	567,599	633,513	649,891
Keta Creek	Chum	Fed-fry	898,472	742,590	1,215,473	1,687,496	1,160,851	96,540	1,159,300	1,206,104
Keta Creek	Coho	Fingerling	489,636	495,272	581,976	470,986	559,625	494,760	495,700	548,240
Keta Creek	Coho	Yearling	58,000	312,885	291,000	194,000	195,000	345,085	290,000	
Keta Creek	Fall Chin	Fingerling	572,245	641,252	554,016	557,093	313,984	587,392	502,633	402,600
Keta Creek	Steel	Fingerling	83,744	77,422	75,137	43439	39,456	60,326	44,987	28,416
Keta Creek	Steel	Yearling			74,900	75,000	50,000	104,000	28,000	34,000
Lake Kapowsin Pens	Coho	Yearling	210,000							
Lake Quinault Pens	Chum	Fed-fry								287,400

WESTERN WASHINGTON TREATY RELEASES BY FACILITY, RELEASE STAGE AND BROOD YEAR

Facility	Species	Class	1995	1996	1997	1998	1999	2000	2001	*Incomplete 2002
Lake Quinault Pens	Coho	Fingerling								
Lake Quinault Pens	Fall Chin	Fingerling	941,954	594,043	641,394	736,699	407,000	513,200	541,421	745,584
Lake Quinault Pens	Sock	Unfed-fry					258,300	841,796	881,645	651,725
Lake Quinault Pens	Sock	Fingerling	13,905					89,650	127,068	
Lake Quinault Pens	Steel	Fed-fry								169,675
Lake Quinault Pens	Steel	Fingerling		139,866						
Lake Quinault Pens	Steel	Yearling	395,132	284,266	193,255	152,400	328,500	101,834	184,134	193,260
Lake Shannon Pens	Steel	Yearling		21,049						
Little Boston	Chum	Fed-fry	600,000	1,050,000	529,969	900,000	530,000	564,350	725,000	822,580
Little Boston	Fall Chin	Fingerling	100,000	139,235						
Little Boston	Pink	Fed-fry	200,000							
Lower Elwha	Chum	Eggs				45,848			47,081	59,149
Lower Elwha	Chum	Fed-fry	37,340	26,731	17,710				2,354	
Lower Elwha	Coho	Fingerling								
Lower Elwha	Coho	Yearling	639,478	867,379	645,643	684,856	494,610	662,231	724,594	
Lower Elwha	Fall Chin	Fingerling								
Lower Elwha	Steel	Yearling	170,063	135,145	160,216	182,615	165,940	120,000	151,700	127,745
Lummi Sea Ponds	Chum	Fed-fry				590,000				
Lummi Sea Ponds	Coho	Yearling	1,218,448	1,199,317	994,782	947,700	820,700	825,000	1,100,500	
Lummi Sea Ponds	Fall Chin	Fingerling	3,244,000	3,140,940	1,500,000	1,800,224	1,200,000	691,251	988,787	800,000
Manchester Fuel Dock Pens	Coho	Yearling							202,351	
Muckleshoot/Puyallup	Spr Chin	Fingerling	390,030	407,700	859,981	32,300	381,698	121,460	870,590	497,750
Muckleshoot/Suquamish	Coho	Yearling	319,120	353,071	499,686	456,139	366,252	274,929		
Nisqually Clear Creek	Coho	Yearling	647,658	638,000	517,000	470,370		613,896	532,733	
Nisqually Clear Creek	Coho	Fed-Fry	363,710	363,710						
Nisqually Clear Creek	Coho	Eggs	140,000	140,000						
Nisqually Clear Creek	Fall Chin	Fingerling	2,078,000	2,945,000	2,704,000	3,135,000	3,187,504	2,708,308	4,636,556	2,864,133
Nisqually Clear Creek	Fall Chin	Yearling	191,600	174,000						
North Fork Hatchery	Coho	Yearling						5,000		
Port Gamble Net Pens	Chum	Fed-fry								
Port Gamble Net Pens	Coho	Yearling	342,828	439,955	420,482	391,765	432,847	432,161	409,221	

WESTERN WASHINGTON TREATY RELEASES BY FACILITY, RELEASE STAGE AND BROOD YEAR

Facility	Species	Class	1995	1996	1997	1998	1999	2000	2001	*incomplete 2002
Quartermaster Hbr Pens	Coho	Yearling	50,000							
Quilcene Bay Pens	Coho	Yearling	220,000	225,269	189,951	208,000	100,000	210,607	90,000	
Rutsatz Slough	Chum	Fed-fry	74,000							
Salmon River	Coho	Yearling	748,588	899,187	734,384	637,200	1,032,744	986,685	1,051,169	
Salmon River	Fall Chin	Fingerling	238,223	280,991	346,780	323,700	193,425	255,811	234,891	278,504
Salmon River	Steel	Yearling	128,762	158,824		201,380	104,450	156,996	153,011	175,915
Shoalwater Tribe	Coho	Fingerling								
Skookum Creek	Coho	Yearling	1,050,125	2,371,537	1,650,000	1,149,200	757,375	991,831	1,100,000	
Umbrella Creek	Sock	Eggs		56,733		41,943	33,927			
Umbrella Creek	Sock	Unfed-fry						63,201	75,900	101,234
Umbrella Creek	Sock	Fingerling	45,220	209,562	187,756	27,385		130,875	170,310	127,316
Upper Skagit	Chum	Fed-fry			209,000	461,687	267,738	158,311	223,247	638,188
Upper Puyallup Ponds	Fall Chin	Fingerling				217,800	199,549	134,053	149,066	200,200
Upper Puyallup Ponds	Coho	Yearling			199,820	101,400	197,140	199,800	209,000	
Websters Hatchery	Chum	Fed-fry							145,889	
Websters Hatchery	Fall Chin	Fingerling	182,686	152,498	170,965	214,118	217,787	160,431	148,533	163,295
White River	Spr Chin	Fingerling	266,021	350,981	278,624	274,815	281,799	279,713	287,785	281,546
White River	Spr Chin	Yearling	82,860	82,920	88,103	20,989	89,939	88,517	89,906	

Brood Year Totals for Western Washington Treaty Tribes and Tribal Cooperatives by Species and Release Stage

		1995	1996	1997	1998	1999	2000	2001	*incomplete 2002
Fall Chinook	Unfed-fry	0	0	0	643,412	0	0	0	0
	Fingerling	14,076,319	14,178,488	12,320,854	13,414,445	12,180,448	8,898,810	12,378,765	10,379,036
	Yearling	191,600	299,682	145,458	96,009	110,052	106,139	13,000	0
Summer Chinook	Fingerling	0	0	0	117,315	185,200	195,000	189,019	188,100
	Yearling	0	0	0	0	0	0	0	0
	Fall Release	0	0	0	0	0	0	0	0
Spring Chinook	Fingerling	656,051	758,681	1,138,605	307,115	663,497	401,173	1,158,375	779,296
	Yearling	113,357	123,620	143,739	66,769	128,539	88,517	89,906	0
Coho	Eggs	140,000	140,000	0	0	0	0	0	0
	Unfed-fry	0	0	0	0	0	0	0	0
	Fingerling	533,728	520,925	581,976	741,065	559,625	524,448	527,624	577,412
	Yearling	6,490,753	9,103,281	7,948,122	7,019,612	5,537,039	6,604,068	6,523,063	0
Chum	Eggs	0	0	0	45,848	0	0	47,081	59,149
	Unfed-fry	0	909,296	0	0	750,957	0	370,388	355,790
	Fed-fry	10,289,035	8,289,255	9,953,572	16,005,103	6,641,440	9,019 005	14,649,305	17,473,852
Pink	Fed-fry	200,000	0	0	0	0	0	0	0
Sockeye	Eggs	0	56,733	0	41,943	33,927	0	0	0
	Unfed-fry	0	0	0	0	258,300	904,997	957,545	752,959
	Fingerling	1,057,713	209,562	187,756	27,385	0	220,525	297,378	127,316
	Yearling	0	0	0	0	0	0	0	0
Steelhead	Fed-fry	0	0	0	0	25,228	0	0	169,675
	Fingerling	125,302	217,288	75,137	43,439	208,956	152,407	44,987	28,416
	Yearling	966,910	863,438	586,105	738,373	726,608	564,517	655,441	627,340
Total =		34,840,768	35,670,249	33,081,324	39,307,833	28,009,816	27,679,606	37,901,877	31,518,341

Adult Fall Chinook Escapement to Western Washington Tribal Enhancement Facility Racks, 1994 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
LUMMI SEA PONDS	16	0	524	57	40	39	30	6	111	54
TULALIP	32	0	63	39	139	661	171	59	22	2
KETA CREEK	0	43	63	177	29	39	3	41	15	39
GROVERS CREEK	1,308	6,265	5,998	3,234	2290	4,643	3,009	4,404	4,512	3,473
DIRU CREEK	22	106	19	0	12	0	0	0	0	0
KALAMA CREEK	1,720	2,016	875	398	1200	2,455	1,679	681	1,455	1,455
CLEAR CK-NISQUALLY	401	1,607	1,826	2,853	2894	12,769	9,685	9,474	9,339	8,086
HOKO HATCHERY*	90	174	47	123	101	206	118	178	316	267
QUINAULT LAKE*	691	664	547	616	568	297	431	631	459	363
SALMON RIVER * (QUEETS R STOCK)	192	172	163	189	123	141	247	190	184	160

* Adult return numbers are from broodstocking efforts

Adult Spring Chinook Escapement to Western Washington Tribal Enhancement Facility Racks, 1994 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
WHITE RIVER	392	682	924	798	454	761	815	1,010	757	1,061
TULALIP*			57	73						

* 1998-2002 Escapement combined w/ fall chinook

Adult Summer Chinook Escapement to Western Washington Tribal Enhancement Facility Racks, 1993 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
HARVEY CREEK*	161	68	150	166	116	127	123	115	132	108
LONESOME CREEK*		144	98	37	1,599	751	997	1,255	1,058	141

* Adult return numbers are from broodstocking efforts

Adult Coho Escapement to Western Washington Tribal Enhancement Facility Racks, 1994 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
LUMMI SEA PONDS	3,405	6,312	4,498	4,410	3,241	10,136	15,665	9,988	5,924	3,792
SKOOKUM CREEK	1,634	12,931	17,893	17,200	10,647	29,179	31,591	33,194	31,881	26,958
HARVEY CREEK*		50	10	45	10	0	80	100	60	24
JIM CREEK				11	8	12				
JOHNSON CREEK	262									
TULALIP	3,050	3,853	5,967	5,823	1,018	3,254	9,643	9,758	917	363
KETA CREEK	11,947	3,024	1,526	2,353	542	2,418	7,756	7,778	1,286	3,044
GROVERS CREEK	819	1,183	999	0	1,273	340	1,165	1,044	218	284
COWLING CREEK		192	255	0	471	44	292	154	27	68
DIRU CREEK	60	35								
KALAMA CREEK	3,746	1,316	1,196	1,619	384	242	533	1,010	0	673
CLEAR CREEK-NISQUALLY	2,772	1,600	4,108	1,191	565	178	1,044	2,027	0	1,462
LITTLE BOSTON				169						
LOWER ELWHA	833	1,875	2,412	1,655	2,442	5,668	2,832	6,778	4,147	2,346
QUINAULT LAKE *	78	1	0	12	568	0	0	0	0	0
SALMON RIVER (SALMON R STOCK)	2,261	2,010	927	475	1,650	1,760	2,093	2,497	917	1,175
SALMON RIVER (QUEETS R STOCK) *	39	105	110	10	68	58	186	160	102	94
SALMON RIVER (CLEARWATER R STC	36	109	101	44	73	49	190	152	74	132

* Adult return numbers are from broodstocking efforts

Adult Chum Escapement to Western Washington Tribal Enhancement Facility Racks, 1994 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
LUMMI SEA PONDS*	862	0	0	0	0	0	0	0	65	0
UPPER SKAGIT *			516	160		176	56	195	397	388
HARVEY CREEK	500	700	700	60	1,601	928	300	758	600	2,180
TULALIP	6,048	5,450	4,468	8,778	8,186	1,828	4,398	7,873	6,519	7,929
KETA CREEK	1,872	851	870	1,503	4,856	1,319	98	5,030	5,408	3,700
COWLING	15,700	7,888	12,407	8,126	27,935	4,359	3,997	18,747	10,182	16,046
DIRU CREEK	2,675	2,324	3,448	1,631	5,229	1,632	3,320	10,050	17,629	12,585
ELSON CREEK	8,267	**	**	**	**	**	**	**	**	**
ENETAI	14,767	5,784	6,842	4,823	14,893	1,207	912		7,007	
PORT GAMBLE	1,512	2,117	5,446	3,366	5,552	930	609	4,656	5,690	5,641
LOWER ELWHA	0	49	53	0	0	0	0	43	30	66
QUINAULT LAKE*	31	0	0	0	0	0	0	0	0	0
SALMON RIVER (SALMON R)	3	0	0	0	0	0	0	0	0	0

* Adult return numbers are from broodstocking efforts

** Hatchery ceased production; no subsequent return counts made

Adult Sockeye Escapement to Western Washington Tribal Enhancement Facility Racks, 1994 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
UMBRELLA CREEK *	54	94	200	205	86	101	785	831	420	556
QUINAULT LAKE *	14	17	30	47	5	162	218	659	631	227

* Adult return numbers are from broodstocking efforts

Fall Chinook Eggs Taken at Western Washington Tribal Enhancement Facilities, 1994 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
LUMMI SEA PONDS	0	0	180,000	42,500	8,000	0	0	4,000	0	17,000
KETA CREEK	0	0	0	0	0	0	0	0	0	0
GROVERS CREEK	3,420,000	3,800,000	4,440,981	3,506,817	2,330,493	4,204,870	3,157,766	3,232,000	2,743,245	3,225,063
DIRU CREEK	45,000	74,200	14,000	0	6,000	0	0	0	0	0
KALAMA CREEK*	4,211,000	2,182,000	1,410,000	717,280	1,485,970	1,400,000	858,000	650,000	834,150	800,000
CLEAR CR-NISQUALLY*	515,500	2,927,000	3,049,000	4,434,000	3,500,000	3,500,000	3,400,000	4,650,000	3,862,400	4,000,000
HOKO HATCHERY*		360,034	87,786	276,340	208,220	389,561	160,600	230,159	519,000	568,000
QUINAULT LAKE*			1,213,000			756,100	814,000	940,050	854,920	884,920
SALMON RIVER *			303,000			271,800	302,000	281,408	368,301	312,300

* Egg take numbers are from broodstocking efforts

Spring Chinook Eggs Taken at Western Washington Tribal Enhancement Facilities, 1994 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
WHITE RIVER*	185,061	912,400	332,300	779,200	454,300	660,260	364,750	1,221,750	670,500	1,224,200

* Egg take numbers are from broodstocking efforts

Summer Chinook Eggs Taken at Western Washington Tribal Enhancement Facilities, 1994 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
HARVEY CREEK*	380,000	50,000	250,000	270,000	285,000	206,000	230,000	270,000	320,000	265,000
LONESOME CREEK*		282,000	134,710	75,000	123,960	75,189	105,116	137,179	103,800	148,273

* Egg take numbers are from broodstocking efforts

Coho Eggs Taken at Western Washington Tribal Enhancement Facilities, 1994 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
LUMMI SEA PONDS		2,079,000	2,214,800	2,300,000	1,200,000	800,000	990,200	1,514,400	616,300	564,500
SKOOKUM CREEK*			2,491,200	2,182,800	1,800,000	1,900,000	1,650,000	1,500,000	1,800,000	1,980,000
HARVEY CREEK*	12,000	0	40,000	20,000	50,000	7,500	0	30,000	45,000	24,000
JIM CREEK					12,000	6,000	12,000	0	0	0
JOHNSON CREEK	86,000	196,000	0	0	0	0	0	0	0	0
KETA CREEK	0	0	0	0	0	0	0	0	0	0
DIRU CREEK			4,000	0	0	0	0	0	0	0
KALAMA CREEK	1,030,000	3,530,000	982,590	670,100	775,190	265,085	0	0	0	550,000
CLEAR CR-NISQUALLY		2,871,000	1,379,900		397,600	320,000	0	0	0	720,000
LOWER ELWHA*	838,000		1,492,205	1,678,085	905,436	1,175,000	1,620,381	1,362,639	1,383,315	1,582,933
SALMON R (SALMON R)*				1,280,000			1,106,700	1,128,000	1,127,652	934,385
SALMON R (QUEETS) *				151,000			74,950	56,900	143,061	106,400
SALMON R (CLEARWATER) *				134,000			84,500	78,500	107,031	155,800

* Egg take numbers are from broodstocking efforts

Chum Eggs Taken at Western Washington Tribal Enhancement Facilities, 1994 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
LUMMI SEA PONDS*	114,000	0	0	0	0	0	0	0	27,560	0
UPPER SKAGIT *				220000		530,000	166,000	294,000	760,000	581,120
HARVEY CREEK	646,000	450,000	900,000	75,000	1,200,000	760,000	350,000	650,000	340,000	400,000
TULALIP	6,500,000	6,156,425	5,000,000	5,000,000	6,145,000	2,058,750	4,690,000	7,576,974	8,905,000	7,892,389
KETA CREEK		896,450		1,244,000	2,670,000	1,425,000	116,000	2,032,768	1,600,000	2,049,226
COWLING	7,048,137	4,130,000	2,940,435	3,778,396	3,717,481	2,164,887	2,549,426	1,885,000	1,298,203	2,388,971
DIRU CREEK	2,500,000	2,086,600	2,049,000	1,287,200	2,129,600	1,394,800	1,839,200	2,351,800	2,805,200	3,320,482
ELSON CREEK	0	0	0	0	0	0	0	0	0	0
ENETAI	3,000,000	2,527,156				559,200			2,973,000	
PORT GAMBLE	1,518,000	1,360,118	1,562,688	1,130,763	1,353,000	630,537	682,137	1,020,000	1,148,757	927,778
LOWER ELWHA		41,338	55,154	21,000	0	0	0	49,434	65,678	155,129

* Egg take numbers are from broodstocking efforts

** Eggs destroyed

Sockeye Eggs Taken at Western Washington Tribal Enhancement Facilities, 1994 - 2003.

FACILITY	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
UMBRELLA CREEK*	58,287	63,619	315,746	201,958	106,300	37,969	337,500	330,000	282,171	346,000
QUINAULT LAKE*		0			0	325,100	1,179,000	1,022,562	938,943	1,200,000

* Egg take numbers are from broodstocking efforts

New Production

There was no new fish production in 2003.

Trends in Production

State budget shortfalls continue to threaten hatchery program reductions throughout Oregon, however, no reductions are slated at this time. Federal NOAA Fisheries (Columbia Fisheries Development Program through the Mitchell Act) budget shortfalls could impact hatchery production in the next couple of years unless more money is appropriated in fiscal year 2004. A Mitchell Act Reform package is being submitted again to the Department of Commerce requesting increased funding to implement new hatchery practices and to increase acclimation sites in the upper Columbia River Basin.

Implementation of the Oregon Plan for Salmon and Steelhead is continuing, emphasizing natural production areas, habitat improvements and cooperative programs to increase naturally produced fish in coastal watersheds. Funding for new innovative hatchery practices is being sought to supplement diminished populations of coastal salmon and steelhead. The Fish and Wildlife Commission recently adopted new polices to guide the management of native fish species and hatchery operations in Oregon by approving the Native Fish Conservation Policy, the Fish Hatchery Management Policy and the Fish Health Management Policy.

Over the past several years ODFW has phased in the use of local broodstocks and phasing out the use of out-of-basin stocks for many hatchery release programs. This should provide better adaptability of the fish to the watershed and better compatibility with local native fish populations.

Due to problems with meeting NPDES waste discharge permit standards at Cedar Creek Hatchery Near Tillamook on the north Oregon coast, production of coho and steelhead smolts was reduced.

Planning is underway for the construction and future operation of a new hatchery research center at the old Fall Creek Hatchery site. This is planned to be a cooperative effort between the Oregon Department of Fish and Wildlife and Oregon State University.

In general, adult salmon returns to Oregon waters have increased markedly the last few years. Negotiations continue for the renewal of the Columbia River Fish Management Plan under the US v. Oregon settlement agreement, which expired at the end of 1998.

RELEASE STAGE	COHO	FALL CHINOOK	TULE FALL CHINOOK	SPRING CHINOOK	SUMMER, WINTER STEELHEAD
FRY	0 AGE	0 AGE	0 AGE	0 AGE	0 AGE
FINGERLING	0-1 YR	0-1 YR	0-0.3 YR	0-1 YR	0-1 YR
SMOLT	1+ YR	1+ YR	0.3+ YR	1+ YR	1+ YR

ACTUAL AND PLANNED ODFW RELEASES OF SALMON AND STEELHEAD IN THE COLUMBIA BASIN FOR BROOD YEARS 1996-2002.

FACILITY NAME	SPECIES	STAGE	1996	1997	1998	1999	2000	2001	2002
BONNEVILLE	CHINOOK FALL	FRY	502,638	0	0	0	0	0	0
TOTALS			502,638	0	0	0	0	0	0
IRRIGON	CHINOOK SPRING	FRY	0	0	0	0	0	55,340	0
LOOKINGGLASS	CHINOOK SPRING	FRY	7,230	11,871	131,764	273,276	569,607	0	0
MARION FORKS	CHINOOK SPRING	FRY	0	0	183,354	0	0	0	0
MCKENZIE	CHINOOK SPRING	FRY	747,700	487,935	0	0	0	0	0
OAK SPRINGS	CHINOOK SPRING	FRY	0	30,409	4,126	0	0	0	0
OXBOW	CHINOOK SPRING	FRY	0	0	0	37,086	0	0	0
ROUND BUTTE	CHINOOK SPRING	FRY	0	91,010	0	0	0	0	0
STEP	CHINOOK SPRING	FRY	0	0	0	0	0	0	90,000
UMATILLA	CHINOOK SPRING	FRY	0	659,607	716,336	682,750	876,221	0	0
WILLAMETTE/DEXTER	CHINOOK SPRING	FRY	1,863,115	247,650	0	0	0	0	0
TOTALS			2,618,045	1,528,482	1,035,580	993,112	1,445,828	55,340	90,000
BIG CREEK	COHO	FRY	0	9,201	0	0	0	0	0
CEDC	COHO	FRY	0	0	681,583	0	0	199,849	0
SANDY	COHO	FRY	0	0	0	0	0	0	1,300
STEP	COHO	FRY	0	0	0	0	0	0	25,000
TOTALS			0	9,201	681,583	0	0	199,849	26,300
BONNEVILLE	STEELHEAD SUMMER	FRY	0	0	0	0	0	0	0
MARION FORKS	STEELHEAD SUMMER	FRY	0	67,118	0	0	0	0	0
OAK SPRINGS	STEELHEAD SUMMER	FRY	0	0	0	4,762	0	0	0
ROUND BUTTE	STEELHEAD SUMMER	FRY	0	0	19,513	33,890	37,665	45,658	0
TOTALS			0	67,118	19,513	38,652	37,665	45,658	0
BONNEVILLE	STEELHEAD WINTER	FRY	0	0	0	0	0	0	0
IRRIGON	STEELHEAD WINTER	FRY	0	0	0	0	0	23,968	0
SANDY	STEELHEAD WINTER	FRY	0	0	0	0	179,079	102,641	0
TOTALS			0	0	0	0	179,079	126,609	0

ACTUAL AND PLANNED ODFW RELEASES OF SALMON AND STEELHEAD IN THE COLUMBIA BASIN FOR BROOD YEARS 1996-2002.

FACILITY NAME	SPECIES	STAGE	1996	1997	1998	1999	2000	2001	2002
BONNEVILLE	CHINOOK FALL	FNG	6,577,692	575,204	5,783,776	7,287,464	5,463,918	4,468,276	5,230,720
CEDC	CHINOOK FALL	FNG	426,866	629,796	85,838	0	205,145	467,056	0
KLASKANINE	CHINOOK FALL	FNG	0	0	0	102,009	0	620,528	0
STEP	CHINOOK TULE	FNG	0	0	0	0	0	0	1,000
UMATILLA	CHINOOK FALL	FNG	2,582,564	2,777,442	1,842,666	3,020,518	646,993	470,409	989,682
TOTALS			9,587,122	3,982,442	7,712,280	10,409,991	6,316,056	6,026,269	6,221,402
CEDC	CHINOOK SPRING	FNG	0	0	324,202	315,994	0	0	0
CLACKAMAS	CHINOOK SPRING	FNG	0	0	0	0	584,644	324,352	321,096
LOOKINGGLASS	CHINOOK SPRING	FNG	388,667	496,968	179,716	147,215	798,521	904,228	917,000
MARION FORKS	CHINOOK SPRING	FNG	77,915	0	35,280	120,135	60,075	99,955	100,000
MCKENZIE	CHINOOK SPRING	FNG	56,660	0	293,832	187,143	88,427	15,058	0
OAK SPRINGS	CHINOOK SPRING	FNG	0	0	0	0	302	0	0
OXBOW	CHINOOK SPRING	FNG	0	0	0	0	0	4,914	0
UMATILLA	CHINOOK SPRING	FNG	272,671	114,370	0	0	0	0	0
WILLAMETTE/DEXTER	CHINOOK SPRING	FNG	322,315	281,255	188,961	366,930	36,244	0	0
TOTALS			1,118,228	892,593	1,021,991	1,137,417	1,568,213	1,348,507	1,338,096
BIG CREEK	COHO	FNG	0	0	0	24,000	0	0	0
CASCADE	COHO	FNG	0	159,656	0	0	0	0	0
OXBOW	COHO	FNG	0	0	0	0	56,117	0	0
STEP	COHO	FNG	7,792	8,471	4,852	0	0	0	12,500
TOTALS			7,792	168,127	4,852	24,000	56,117	0	12,500
BONNEVILLE	STEELHEAD SUMMER	FNG	0	0	26,573	0	490	43,513	0
IRRIGON	STEELHEAD SUMMER	FNG	0	0	5,015	178,566	137,750	0	0
LEABURG	STEELHEAD SUMMER	FNG	0	0	12,673	32,332	0	1,728	0
OAK SPRINGS	STEELHEAD SUMMER	FNG	0	0	3,378	0	0	0	0
SO. SANTIAM	STEELHEAD SUMMER	FNG	0	0	0	0	36,265	54,251	0
UMATILLA	STEELHEAD SUMMER	FNG	0	0	0	9,873	0	0	0
WALLOWA	STEELHEAD SUMMER	FNG	0	0	0	0	0	0	800
TOTALS			0	0	47,639	220,771	174,505	99,492	800

ACTUAL AND PLANNED ODFW RELEASES OF SALMON AND STEELHEAD IN THE COLUMBIA BASIN FOR BROOD YEARS 1996-2002.

FACILITY NAME	SPECIES	STAGE	1996	1997	1998	1999	2000	2001	2002
BIG CREEK	STEELHEAD WINTER	FNG	0	0	54,600	0	0	17,428	0
BONNEVILLE	STEELHEAD WINTER	FNG	0	20,107	0	77,288	155,043	3,580	0
LEABURG	STEELHEAD WINTER	FNG	0	51,501	0	0	0	0	0
MARION FORKS	STEELHEAD WINTER	FNG	0	0	149,488	0	0	0	0
OAK SPRINGS	STEELHEAD WINTER	FNG	0	17,985	0	18,802	0	0	0
STEP	STEELHEAD WINTER	FNG	100	50,108	950	0	0	0	92,300
WILLAMETTE/DEXTER	STEELHEAD WINTER	FNG	0	20,783	0	0	0	0	0
TOTALS			100	160,484	205,038	96,090	155,043	21,008	92,300
BIG CREEK	CHINOOK TULE	SMT	5,961,118	5,867,783	5,804,921	5,821,235	4,537,448	5,765,933	5,700,000
CEDC	CHINOOK FALL	SMT	293,581	117,583	136,134	153,928	0	0	1,575,000
KLASKANINE	CHINOOK FALL	SMT	603,957	661,977	703,200	306,483	669,913	0	700,000
STEP	CHINOOK TULE	SMT	17,600	23,916	18,720	0	0	0	27,500
UMATILLA	CHINOOK FALL	SMT	436,009	449,568	469,756	400,761	520,564	0	0
TOTALS			7,312,265	7,120,827	7,132,731	6,682,407	5,727,925	5,765,933	8,002,500
CEDC	CHINOOK SPRING	SMT	958,766	850,702	586,858	472,300	868,970	0	1,575,000
CLACKAMAS	CHINOOK SPRING	SMT	1,529,224	1,419,961	1,553,971	1,231,222	562,816	0	50,000
LOOKINGGLASS	CHINOOK SPRING	SMT	0	10,242	0	0	303,737	0	0
MARION FORKS	CHINOOK SPRING	SMT	647,523	657,307	666,240	664,200	663,604	767,000	1,237,000
MCKENZIE	CHINOOK SPRING	SMT	1,301,060	1,343,971	1,303,497	1,300,969	1,240,837	1,185,000	1,198,750
OAK SPRINGS	CHINOOK SPRING	SMT	0	0	30,520	38,424	30,991	30,000	15,000
ROUND BUTTE	CHINOOK SPRING	SMT	458,835	303,821	400,825	387,472	362,115	0	382,500
SANDY	CHINOOK SPRING	SMT	0	0	0	150,048	290,797	0	300,000
SO. SANTIAM	CHINOOK SPRING	SMT	978,890	1,017,121	1,023,661	1,007,918	1,040,829	1,165,000	153,000
STEP	CHINOOK SPRING	SMT	266,916	239,553	223,271	225,590	129,750	0	80,000
UMATILLA	CHINOOK SPRING	SMT	554,794	0	99,848	99,983	0	0	635,000
WILLAMETTE/DEXTER	CHINOOK SPRING	SMT	1,435,707	1,426,214	1,585,368	1,670,221	1,837,897	4,153,289	2,713,240
TOTALS			8,131,715	7,268,892	7,474,059	7,248,347	7,332,343	7,300,289	8,339,490

ACTUAL AND PLANNED ODFW RELEASES OF SALMON AND STEELHEAD IN THE COLUMBIA BASIN FOR BROOD YEARS 1996-2002.

FACILITY NAME	SPECIES	STAGE	1996	1997	1998	1999	2000	2001	2002
BIG CREEK	COHO	SMT	561,346	525,342	543,459	537,185	540,898	535,000	535,000
BONNEVILLE	COHO	SMT	991,036	1,316,431	1,176,082	1,249,655	1,198,209	0	0
CASCADE	COHO	SMT	1,078,461	850,952	1,048,002	995,820	1,718,613	2,166,751	1,675,000
CEDC	COHO	SMT	1,934,628	2,933,457	3,154,223	3,023,793	3,283,583	3,375,000	2,725,000
GNAT CREEK	COHO	SMT	0	0	0	41,218	40,000	40,000	0
OXBOW	COHO	SMT	528,450	465,314	513,288	478,739	0	500,000	0
SANDY	COHO	SMT	285,820	773,133	953,377	787,343	862,729	350,000	350,000
TOTALS			5,379,741	6,864,629	7,388,431	7,113,753	7,644,032	6,966,751	5,285,000
BONNEVILLE	STEELHEAD SUMMER	SMT	165,012	0	77,566	59,915	0	0	0
CLACKAMAS	STEELHEAD SUMMER	SMT	0	150,588	170,903	116,096	137,921	176,106	175,000
IRRIGON	STEELHEAD SUMMER	SMT	262,459	262,465	127,795	100,867	101,001	102,601	540,000
LEABURG	STEELHEAD SUMMER	SMT	113,907	111,656	114,843	114,526	67,949	113,230	108,000
MARION FORKS	STEELHEAD SUMMER	SMT	0	92,394	159,280	0	130,537	163,200	165,397
OAK SPRINGS	STEELHEAD SUMMER	SMT	138,664	102,402	100,007	89,582	60,338	58,911	165,960
ROARING RIVER	STEELHEAD SUMMER	SMT	178,309	31,836	0	0	39,995	45,661	0
ROUND BUTTE	STEELHEAD SUMMER	SMT	186,134	195,762	183,366	182,026	189,489	178,514	217,500
SANDY	STEELHEAD SUMMER	SMT	0	37,798	35,324	37,286	59,889	76,654	75,000
SO. SANTIAM	STEELHEAD SUMMER	SMT	183,700	186,911	153,665	149,487	148,458	149,853	144,000
UMATILLA	STEELHEAD SUMMER	SMT	137,287	137,449	86,069	153,738	100,318	105,087	100,000
WALLOWA	STEELHEAD SUMMER	SMT	1,443,294	1,243,067	1,585,129	1,120,184	1,091,403	1,069,844	790,000
WILLAMETTE/DEXTER	STEELHEAD SUMMER	SMT	113,840	116,754	157,710	161,414	164,452	115,387	157,000
TOTALS			2,922,606	2,669,082	2,951,657	2,285,121	2,291,750	2,355,048	2,637,857
BIG CREEK	STEELHEAD WINTER	SMT	89,764	70,766	61,931	61,372	60,423	60,522	60,000
BONNEVILLE	STEELHEAD WINTER	SMT	134,219	185,926	258,236	104,292	0	0	100,000
CLACKAMAS	STEELHEAD WINTER	SMT	84,804	89,304	62,480	231,141	130,242	127,501	135,000
GNAT CREEK	STEELHEAD WINTER	SMT	31,949	40,160	40,775	41,218	0	0	40,000
KLASKANINE	STEELHEAD WINTER	SMT	53,278	59,962	64,614	62,103	56,210	60,000	60,000
MARION FORKS	STEELHEAD WINTER	SMT	39,339	104,156	0	0	81	0	0
OAK SPRINGS	STEELHEAD WINTER	SMT	86,206	107,096	92,700	60,403	57,049	62,921	15,000
ROARING RIVER	STEELHEAD WINTER	SMT	0	0	0	0	0	94,159	85,000
SANDY	STEELHEAD WINTER	SMT	20,022	50,102	39,732	40,676	40,198	0	160,000
STEP	STEELHEAD WINTER	SMT	60,754	82,142	92,943	91,811	145,601	49,395	20,000
WILLAMETTE/DEXTER	STEELHEAD WINTER	SMT	79,777	81,505	82,009	30,177	87,780	0	0
TOTALS			680,112	871,119	795,420	723,193	577,584	454,498	675,000

ACTUAL AND PLANNED ODFW RELEASES OF NORTH MIGRATING COASTAL SALMON AND STEELHEAD FOR BROOD YEARS 1996-2002.

FACILITY NAME	SPECIES	STAGE	1996	1997	1998	1999	2000	2001	2002
BANDON	CHINOOK FALL	FRY	0	0	0	0	0	0	30,000
ELK RIVER	CHINOOK FALL	FRY	0	0	0	0	0	0	200,000
ROCK CREEK	CHINOOK FALL	FRY	0	0	30,112	0	0	0	100,000
SALMON RIVER	CHINOOK FALL	FRY	0	0	93,980	122,284	143,972	208,878	0
STEP	CHINOOK FALL	FRY	11,420	12,500	654,776	730,007	665,347	0	1,126,500
TOTALS			11,420	12,500	778,868	852,291	809,319	208,878	1,456,500
CEDAR CREEK	CHINOOK SPRING	FRY	0	0	0	11,246	0	0	0
ROCK CREEK	CHINOOK SPRING	FRY	0	0	0	0	0	90,885	0
STEP	CHINOOK SPRING	FRY	0	0	0	0	0	0	107,950
TRASK	CHINOOK SPRING	FRY	13,261	0	0	30,000	12,800	0	0
TOTALS			13,261	0	0	41,246	12,800	90,885	107,950
BUTTE FALLS	COHO	FRY	0	0	0	0	24,960		0
ROCK CREEK	COHO	FRY	0	0	0	0	0	0	80,000
SALMON RIVER	COHO	FRY	0	0	0	2,030	0	0	0
STEP	COHO	FRY	0	0	6,942	0	6,000	542,550	542,550
TOTALS			0	0	6,942	2,030	30,960	542,550	622,550
STEP	STEELHEAD SUMMER	FRY	0	0	0	0	0	0	44,250
TOTALS			0	0	0	0	0	0	44,250
ROCK CREEK	STEELHEAD WINTER	FRY	0	0	0	0	0	0	0
STEP	STEELHEAD WINTER	FRY	0	25,675	14,960	14,994	0	15,360	126,460
TRASK	STEELHEAD WINTER	FRY	0	16,064	5,545	35,260	34,070	31,629	0
TOTALS			0	41,739	20,505	50,254	34,070	46,989	126,460
BANDON	CHINOOK FALL	FNG	95,109	75,980	70,096	0	0	0	752,500
ROCK CREEK	CHINOOK FALL	FNG	249,294	0	0	0	0	0	100,000
STEP	CHINOOK FALL	FNG	1,931,802	1,074,167	1,031,209	1,316,255	1,858,394	0	1,235,000
TRASK	CHINOOK FALL	FNG	6,298	0	0	0	0	19,740	50,000
TOTALS			2,282,503	1,150,147	1,101,305	1,316,255	1,858,394	19,740	2,137,500

ACTUAL AND PLANNED ODFW RELEASES OF NORTH MIGRATING COASTAL SALMON AND STEELHEAD FOR BROOD YEARS

FACILITY NAME	SPECIES	STAGE	1996	1997	1998	1999	2000	2001	2002
CEDAR CREEK	CHINOOK SPRING	FNG	0	0	0	0	20,475	16,377	0
COLE RIVERS	CHINOOK SPRING	FNG	439,855	497,720	49,989	0	0	416,522	200,000
ROCK CREEK	CHINOOK SPRING	FNG	0	0	0	0	0	0	40,000
STEP	CHINOOK SPRING	FNG	85,658	61,435	100,622	69,722	43,095	50,839	70,000
TOTALS			525,513	559,155	150,611	69,722	63,570	483,738	310,000
TRASK	CHINOOK WINTER	FNG	49,100	49,395	19,282	41,936	57,317	0	0
TOTALS			49,100	49,395	19,282	41,936	57,317	0	0
BUTTE FALLS	COHO	FNG	0	0	10,440	0	0	0	0
COLE RIVERS	COHO	FNG	37,885	12,000	0	199,842	164,667	66,852	0
NEHALEM	COHO	FNG	0	49,450	74,563	103,371	63,733	180,923	0
STEP	COHO	FNG	183,200	0	10,925	15,750	0	30,000	28,000
TRASK	COHO	FNG	0	0	0	0	0	60,029	0
TOTALS			221,085	61,450	95,928	318,963	228,400	337,804	28,000
CEDAR CREEK	STEELHEAD SUMMER	FNG	15,170	20,323	24,420	44,480	8,757	49,216	42,780
COLE RIVERS	STEELHEAD SUMMER	FNG	24,344	25,695	45,211	17,201	0	85,455	24,500
SALMON RIVER	STEELHEAD SUMMER	FNG	12,728	14,579	0	0	0	0	0
TOTALS			52,242	60,597	69,631	61,681	8,757	134,671	67,280
ALSEA	STEELHEAD WINTER	FNG	0	12,667	69,890	0	0	0	0
BANDON	STEELHEAD WINTER	FNG	0	12,514	0	0	19,952	0	0
CEDAR CREEK	STEELHEAD WINTER	FNG	20,240	27,953	0	0	2,210	41,025	88,930
COLE RIVERS	STEELHEAD WINTER	FNG	95,261	137,210	150,041	86,248	146,536	35,236	40,000
ELK RIVER	STEELHEAD WINTER	FNG	15,885	754	14,205	19,686	22,837	20,242	20,000
NEHALEM	STEELHEAD WINTER	FNG	0	0	0	89,486	95,478	107,446	84,969
ROCK CREEK	STEELHEAD WINTER	FNG	17,627	0	0	3,627	0	0	0
STEP	STEELHEAD WINTER	FNG	0	8,000	0	0	0	0	0
TOTALS			149,013	199,098	234,136	199,047	287,013	203,949	233,899

ACTUAL AND PLANNED ODFW RELEASES OF NORTH MIGRATING COASTAL SALMON AND STEELHEAD FOR BROOD YEARS

FACILITY NAME	SPECIES	STAGE	1996	1997	1998	1999	2000	2001	2002
BANDON	CHINOOK FALL	SMT	40,260	46,057	0	96,200	0	95,466	310,000
BUTTE FALLS	CHINOOK FALL	SMT	54,970	0	54,256	0	0	0	10,000
CEDAR CREEK	CHINOOK FALL	SMT	0	0	0	0	0	0	100,000
ELK RIVER	CHINOOK FALL	SMT	565,821	499,669	528,108	498,591	496,241	468,591	475,000
NEHALEM	CHINOOK FALL	SMT	21,742	28,514	26,995	26,079	25,110	26,240	25,000
ROCK CREEK	CHINOOK FALL	SMT	102,348	0	0	0	0	0	0
SALMON RIVER	CHINOOK FALL	SMT	203,986	205,489	198,979	199,089	207,468	0	350,000
STEP	CHINOOK FALL	SMT	154,464	154,637	150,630	244,313	158,980	78,781	127,700
TRASK	CHINOOK FALL	SMT	66,986	53,296	85,133	61,814	65,822	113,203	63,000
TOTALS			1,210,577	987,662	1,044,101	1,126,086	953,621	782,281	1,460,700
CEDAR CREEK	CHINOOK SPRING	SMT	120,651	122,222	119,800	0	107,636	103,969	110,000
COLE RIVERS	CHINOOK SPRING	SMT	1,672,186	1,637,155	1,633,666	511,334	1,931,910	1,802,148	1,922,000
ROCK CREEK	CHINOOK SPRING	SMT	247,660	403,412	399,938	424,498	554,133	412,000	472,000
STEP	CHINOOK SPRING	SMT	57,976	55,813	50,820	0	72,563	62,963	10,000
TRASK	CHINOOK SPRING	SMT	208,413	244,835	214,704	246,583	255,415	224,602	265,000
TOTALS			2,306,886	2,463,437	2,418,928	1,182,415	2,921,657	2,605,682	2,779,000
TRASK	CHINOOK WINTER	SMT	0	0	0	0	0	0	95,000
TOTALS			0	0	0	0	0	0	95,000
BANDON	COHO	SMT	27,418	28,751	26,219	25,452	32,132	25,000	37,500
BUTTE FALLS	COHO	SMT	136,232	29,348	47,143	63,015	105,281	147,500	47,500
COLE RIVERS	COHO	SMT	214,121	207,154	179,401	0	264,868	320,000	320,000
FALL CREEK	COHO	SMT	206,241	0	0	0	0	0	0
NEHALEM	COHO	SMT	192,645	214,556	209,652	204,648	204,534	0	100,000
ROCK CREEK	COHO	SMT	173,446	141,374	162,673	76,851	115,178	0	107,500
SALMON RIVER	COHO	SMT	393,021	111,052	20,450	198,107	192,945	254,813	200,000
STEP	COHO	SMT	79,135	124,322	165,686	125,352	3,000	0	42,000
TRASK	COHO	SMT	212,525	189,230	196,385	194,634	201,749	200,000	100,000
TOTALS			1,634,784	1,045,787	1,007,609	888,059	1,119,687	947,313	954,500

ACTUAL AND PLANNED ODFW RELEASES OF NORTH MIGRATING COASTAL SALMON AND STEELHEAD FOR BROOD YEARS

FACILITY NAME	SPECIES	STAGE	1996	1997	1998	1999	2000	2001	2002
CEDAR CREEK	STEELHEAD SUMMER	SMT	98,197	99,401	85,388	75,765	103,786	95,037	100,000
COLE RIVERS	STEELHEAD SUMMER	SMT	226,076	222,122	219,837	235,661	229,134	216,905	220,000
ROCK CREEK	STEELHEAD SUMMER	SMT	172,584	117,569	109,705	158,641	158,364	42,585	165,000
SALMON RIVER	STEELHEAD SUMMER	SMT	79,770	3,476	81,228	50,397	77,674	71,740	80,000
STEP	STEELHEAD SUMMER	SMT	20,001	20,800	8,098	19,860	0	0	20,000
TOTALS			596,628	463,368	504,256	540,324	568,958	426,267	585,000
ALSEA	STEELHEAD WINTER	SMT	191,972	143,261	185,577	198,252	206,143	199,286	243,000
BANDON	STEELHEAD WINTER	SMT	74,226	116,934	10,926	1,766	5,670	11,192	78,000
CEDAR CREEK	STEELHEAD WINTER	SMT	192,593	191,724	186,503	188,993	264,757	226,334	200,000
COLE RIVERS	STEELHEAD WINTER	SMT	377,004	334,250	332,175	340,263	340,622	210,000	298,000
ELK RIVER	STEELHEAD WINTER	SMT	42,895	41,879	51,168	50,951	71,173	49,610	50,000
FALL CREEK	STEELHEAD WINTER	SMT	41,989	43,867	40,118	45,298	0	0	0
NEHALEM	STEELHEAD WINTER	SMT	127,814	118,404	142,768	139,716	138,257	138,903	130,000
ROCK CREEK	STEELHEAD WINTER	SMT	77,187	45,168	71,281	46,788	0	0	173,000
STEP	STEELHEAD WINTER	SMT	165,194	166,381	157,382	232,321	144,751	0	180,600
TRASK	STEELHEAD WINTER	SMT	20,800	0	0	0	0	0	0
TOTALS			1,311,674	1,201,868	1,177,898	1,244,348	1,171,373	835,325	1,352,600

COLUMBIA TOTALS AND PLANNED RELEASES OF SALMON AND STEELHEAD BY OREGON FOR BROOD YEARS 1996-2002.

SPECIES	STAGE	1996	1997	1998	1999	2000	2001	2002
CHINOOK FALL	FRY	502,638	0	0	0	0	0	0
CHINOOK FALL	FNG	9,587,122	3,982,442	7,712,280	10,409,991	6,316,056	6,026,269	6,220,402
CHINOOK FALL	SMT	1,333,547	1,229,128	1,309,090	861,172	1,190,477	0	2,275,000
	TOTALS	11,423,307	5,211,570	9,021,370	11,271,163	7,506,533	6,026,269	8,495,402
CHINOOK TULE	FRY	0	0	0	0	0	0	0
CHINOOK TULE	FNG	0	0	0	0	0	0	1,000
CHINOOK TULE	SMT	5,978,718	5,891,699	5,823,641	5,821,235	4,537,448	5,765,933	5,727,500
	TOTALS	5,978,718	5,891,699	5,823,641	5,821,235	4,537,448	5,765,933	5,728,500
CHINOOK SPRING	FRY	2,618,045	1,528,482	1,035,580	993,112	1,445,828	55,340	90,000
CHINOOK SPRING	FNG	1,118,228	892,593	1,021,991	1,137,417	1,568,213	1,348,507	1,338,096
CHINOOK SPRING	SMT	8,131,715	7,268,892	7,474,059	7,248,347	7,332,343	7,300,289	8,339,490
	TOTALS	11,867,988	9,689,967	9,531,630	9,378,876	10,346,384	8,704,136	9,767,586
COHO	FRY	0	9,201	681,583	0	0	199,849	26,300
COHO	FNG	7,792	168,127	4,852	24,000	56,117	0	12,500
COHO	SMT	5,379,741	6,864,629	7,388,431	7,113,753	7,644,032	6,966,751	5,285,000
	TOTALS	5,387,533	7,041,957	8,074,866	7,137,753	7,700,149	7,166,600	5,323,800
STEELHEAD SUMMER	FRY	0	67,118	19,513	38,652	37,665	45,658	0
STEELHEAD SUMMER	FNG	0	0	47,639	220,771	174,505	99,492	800
STEELHEAD SUMMER	SMT	2,922,606	2,669,082	2,951,657	2,285,121	2,291,750	2,355,048	2,637,857
	TOTALS	2,922,606	2,736,200	3,018,809	2,544,544	2,503,920	2,500,198	2,638,657
STEELHEAD WINTER	FRY	0	0	0	0	179,079	126,609	0
STEELHEAD WINTER	FNG	100	160,484	205,038	96,090	155,043	21,008	92,300
STEELHEAD WINTER	SMT	680,112	871,119	795,420	723,193	577,584	454,498	675,000
	TOTALS	680,212	1,031,603	1,000,458	819,283	911,706	602,115	767,300

NORTH COAST TOTAL AND PLANNED RELEASES OF SALMON AND STEELHEAD BY OREGON FOR BROOD YEARS 1996-2002.

SPECIES	STAGE	1996	1997	1998	1999	2000	2001	2002
CHINOOK FALL	FRY	11,420	12,500	778,868	852,291	809,319	208,878	1,456,500
CHINOOK FALL	FNG	2,282,503	1,150,147	1,101,305	1,316,255	1,858,394	19,740	2,137,500
CHINOOK FALL	SMT	1,210,577	987,662	1,044,101	1,126,086	953,621	782,281	1,460,700
	TOTALS	3,504,500	2,150,309	2,924,274	3,294,632	3,621,334	1,010,899	5,054,700
CHINOOK SPRING	FRY	13,261	0	0	41,246	12,800	90,885	107,950
CHINOOK SPRING	FNG	525,513	559,155	150,611	69,722	63,570	483,738	310,000
CHINOOK SPRING	SMT	2,306,886	2,463,437	2,418,928	1,182,415	2,921,657	2,605,682	2,779,000
	TOTALS	2,845,660	3,022,592	2,569,539	1,293,383	2,998,027	3,180,305	3,196,950
CHINOOK WINTER	FRY	0	0	0	0	0	0	0
CHINOOK WINTER	FNG	49,100	49,395	19,282	41,936	57,317	0	0
CHINOOK WINTER	SMT	0	0	0	0	0	0	95,000
	TOTALS	49,100	49,395	19,282	41,936	57,317	0	95,000
COHO	FRY	0	0	6,942	2,030	30,960	542,550	622,550
COHO	FNG	221,085	61,450	95,928	318,963	228,400	337,804	28,000
COHO	SMT	1,634,784	1,045,787	1,007,609	888,059	1,119,687	947,313	954,500
	TOTALS	1,855,869	1,107,237	1,110,479	1,209,052	1,379,047	1,827,667	1,605,050
STEELHEAD SUMMER	FRY	0	0	0	0	0	0	44,250
STEELHEAD SUMMER	FNG	52,242	60,597	69,631	61,681	8,757	134,671	67,280
STEELHEAD SUMMER	SMT	596,628	463,368	504,256	540,324	568,958	426,267	585,000
	TOTALS	648,870	523,965	573,887	602,005	577,715	560,938	696,530
STEELHEAD WINTER	FRY	0	41,739	20,505	50,254	34,070	46,989	126,460
STEELHEAD WINTER	FNG	149,013	199,098	234,136	199,047	287,013	203,949	233,899
STEELHEAD WINTER	SMT	1,311,674	1,201,868	1,177,898	1,244,348	1,171,373	835,325	1,352,600
	TOTALS	1,460,687	1,442,705	1,432,539	1,493,649	1,492,456	1,086,263	1,712,959

ADULT RETURNS AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP).

ADULT COHO RETURNS 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
STEP (COAST)	303	240	284	521	881	2,262	0
ALSEA	0	0	0	56	355	28	0
BANDON	159	93	252	541	1,213	213	0
BIG CREEK	3,998	1,947	1,684	4,034	10,047	8,365	6,993
BONNEVILLE	14,960	6,061	4,512	18,142	45,163	25,888	34,477
CASCADE	0	952	396	1,270	0	0	0
CEDAR CREEK	0	0	13	3	9	6	0
CEDC	189	877	403	309	953	775	1,917
CLACKAMAS	7	0	6	58	6	0	0
COLE RIVERS	7,995	2,963	4,350	9,321	12,738	11,587	8
EEL LAKE	0	72	0	0	0	0	0
ELK RIVER	14	5	75	31	125	47	0
FALL CREEK	2,930	6,033	802	0	0	0	0
KLASKANINE	726	27	48	50	293	556	58
MID-COLUMBIA STLD	15	56	31	42	1,006	0	0
NEHALEM	2,645	2,576	1,197	697	6,728	2,638	1,515
ROCK CREEK	431	824	970	1,102	832	750	577
ROUND BUTTE	0	0	0	0	19	0	0
SALMON RIVER	2,639	1,392	2,820	366	1,531	3,889	121
SANDY	1,276	5,476	1,013	12,556	21,884	7,275	5,282
SILETZ TRAP	6	11	1	7	45	55	0
THREE-MILE	675	3,081	3,695	4,557	0	0	0
TRASK	768	1,485	3,893	4,297	15,840	12,453	1,121

ADULT RETURNS AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP).

ADULT FALL CHINOOK RETURNS 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
STEP (COAST)	1,695	2,464	2,408	2,872	4,494	7,575	0
BANDON	75	94	94	101	106	99	0
BIG CREEK	5,998	4,708	6,760	2,421	17,485	20,333	16,642
BONNEVILLE	14,620	13,097	6,124	5,553	13,618	21,309	20,414
CASCADE	0	662	382	100	0	0	0
CEDAR CREEK	7	3	82	78	24	262	0
CEDC	2	0	4	4	0	1	299
COLE RIVERS	13	22	7	103	202	125	0
ELK RIVER	1,356	1,722	1,758	1,416	3,390	1,579	0
FALL CREEK	25	134	373	0	0	0	0
KLASKANINE	22	14	335	760	852	1,542	749
MID-COLUMBIA STLD	29	40	16	30	45	0	0
NEHALEM	0	0	0	8	0	3	0
ROUND BUTTE	134	169	83	97	186	283	77
ROCK CREEK	0	34	174	211	234	224	219
SALMON RIVER	330	377	564	901	1,596	819	41
SILETZ TRAP	32	0	0	16	48	4	0
THREE-MILE	352	286	741	641	0	0	0
TRASK	130	221	0	232	444	350	0
						54,508	38,441

ADULT RETURNS AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP).

ADULT SPRING CHINOOK RETURNS 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
BIG CREEK	0	0	62	415	970	809	750
BONNEVILLE	0	0	25	0	0	0	1
CEDAR CREEK	266	149	234	293	298	1,362	1,324
CEDC	21	32	2	28	0	0	0
CLACKAMAS	2,624	4,446	4,522	4,240	6,176	6,366	3,313
COLE RIVERS	27,857	9,993	16,811	22,887	25,054	22,178	14,676
KLASKANINE	0	6	11	1	8	0	0
LOOKINGGLASS	588	380	280	834	3,961	1,377	1,143
MARION FORKS	875	1,925	1,923	3,004	3,411	4,948	4,411
MCKENZIE	1,660	1,685	2,231	3,505	3,852	8,021	6,679
MID-COLUMBIA STLD	359	99	118	93	780	146	0
PARKDALE					20	0	0
ROUND BUTTE	1,083	314	927	540	2,416	4,472	3,506
ROCK CREEK	300	378	498	639	1,143	492	537
SANDY	0	0	0	32	3,481	4,338	4,020
SO. SANTIAM	1,789	3,821	5,310	4,054	5,669	7,569	6,578
SILETZ TRAP	117	68	89	313	506	231	32
THREE-MILE	2,185	405	1,765	1,788	1,574	0	0
TRASK	590	371	425	409	298	467	481
WILLAMETTE/DEXTER	7,132	8,793	8,871	5,604	7,348	10,457	6,129

ADULT RETURNS AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP).

ADULT WINTER CHINOOK RETURNS 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
TRASK	23	29	35	60	0	0	0

ADULT SUMMER CHINOOK RETURNS 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
BONNEVILLE	0	0	0	0	0	0	0

ADULT CHUM RETURNS 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
BANDON	0	0	0	0	0	0	0
BONNEVILLE	0	0	0	1	0	2	0
BIG CREEK	3	3	0	0	4	0	0
CEDAR CREEK	0	0	0	0	0	0	0
ELK RIVER	0	0	0	0	3	0	0
SALMON RIVER	0	0	2	0	6	0	0

ADULT RETURNS AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP).

ADULT SUMMER STEELHEAD RETURNS 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
BIG CREEK	9	18	6	0	0	0	0
BONNEVILLE	0	12	2	5	20	8	4
CASCADE	7	0	0	0	0	0	0
CEDAR CREEK	369	564	1119	897	2,053	2,282	2,307
CLACKAMAS	79	13	15	50	1,254	2,287	3,703
COLE RIVERS	8128	7628	2944	4,154	4,966	12,017	16,848
LEABURG	403	1198	501	922	2,109	2,154	2,387
LOOKINGGLASS	12	17	0	11	119	302	179
MARION FORKS	0	0	0	765	2,579	5,192	5,854
MCKENZIE	0	65	0	0	0	175	0
MID-COLUMBIA STLD	1585	735	1444	1,340	4,307	5,895	4,860
ROUND BUTTE	5796	5129	2601	1,905	2,828	8,980	6,329
ROCK CREEK	328	299	438	536	469	442	421
SALMON RIVER	0	0	9	5	3	0	8
SANDY	0	0	15	327	1,036	1,066	939
SO. SANTIAM	2372	5579	7183	6,529	9,544	12,967	11,080
SILETZ TRAP	1449	983	2020	1,850	1,859	2,146	2,596
TRASK	6	0	1	19	20	77	0
THREE MILE	2477	1756	1886	1,795	2,689	0	0
WALLOWA	3716	3329	2114	1,879	3,547	9,371	5,676
WILLAMETTE/DEXTER	977	824	824	2,213	331	1,105	673

ADULT RETURNS AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP).

ADULT WINTER STEELHEAD RETURNS 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
STEP (COAST)	1,153	627	960	749	277	414	95
ALSEA	2,719	920	2,077	1,499	1,254	5,209	2,545
BANDON	496	278	232	239	156	143	238
BIG CREEK	361	77	276	393	86	3,089	977
BONNEVILLE	0	0	0	0	13	1	0
CEDAR CREEK	546	831	2,587	1,157	2,573	5,783	2,374
CLACKAMAS	230	272	482	813	546	1,806	1,628
COLE RIVERS	3,835	3,329	3,469	3,393	4,878	10,532	5,994
FALL CREEK	541	159	365	266	372	837	225
KLASKANINE	438	210	893	264	1,026	299	0
MARION FORKS	155	231	249	168	1,156	442	174
MID-COLUMBIA STLD	1,099	782	693	1,257	2,457	2,396	65
NEHALEM	1,422	653	1,392	1,173	668	3,256	1,058
ROCK CREEK	159	230	265	180	138	281	188
SALMON RIVER	0	0	36	2	5	16	2
SANDY	0	0	63	294	193	1,994	1,381
SILETZ TRAP	517	424	407	313	418	538	250
SO. SANTIAM	314	353	304	319	783	1,008	829
TRASK	77	134	536	318	101	593	277

EGG TAKES AT OREGON PRIVATE AND STATE FACILITIES.

COHO EGGS TAKEN AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP) 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
STEP (COAST)	280,646	75,220	0	173,646	342,504	505,926	0
BANDON	185,146	169,113	0	387,459	317,707	140,792	0
BIG CREEK	1,271,237	752,459	1,366,915	1,229,612	869,021	779,788	829,464
BONNEVILLE	9,595,758	6,101,213	4,591,795	5,441,321	6,946,010	8,593,362	6,694,800
CASCADE	0	1,003,576	0	911,187	0	0	0
CEDC	217,537	951,929	441,920	439,417	1,126,675	84,000	0
COLE RIVERS	502,340	351,573	324,000	423,395	402,436	401,784	0
NEHALEM	535,904	478,071	0	552,281	641,372	356,381	282,300
ROCK CREEK	455,394	774,863	1,039,594	936,428	987,324	1,072,585	0
SALMON RIVER	208,591	533,027	627,566	407,942	612,741	477,316	0
SANDY	1,638,085	1,870,148	1,176,000	1,375,648	1,912,800	1,551,230	620,800
TRASK	323,965	303,173	354,900	310,036	330,388	227,154	0

FALL CHINOOK EGGS TAKEN AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP) 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
STEP (COAST)	1,872,622	2,573,442	2,803,726	2,404,894	4,164,248	4,513,346	0
BANDON	136,812	177,593	211,740	233,340	263,207	260,679	0
BIG CREEK	7,180,763	5,992,801	7,363,077	4,401,197	6,988,433	7,385,457	7,034,765
BONNEVILLE	14,824,170	8,057,497	10,481,027	7,554,378	11,132,864	9,723,724	1,219,500
CASCADE	0	3,470,255	0	98,459	0	0	0
CEDAR CREEK	0	0	118,834	2,289,019	42,756	142,771	109,350
CEDC	0	0	119,852	104,311	111,570	0	479,509
ELK RIVER	1,446,635	1,123,052	935,947	1,116,000	1,650,011	938,149	0
IRRIGON	126,680	0	0	0	0	0	0
KLASKANINE	43,265	0	259,564	1,002,566	1,136,834	1,813,568	1,152,059
ROCK CREEK	0	37,085	359,216	433,501	416,993	472,197	369,266
SALMON RIVER	429,709	449,159	434,076	501,136	540,199	549,311	0
TRASK	276,811	371,097	507,017	270,161	489,596	355,964	0
UMATILLA	4,362,285	3,656,630	4,379,783	1,081,481	732,205	678,122	0

EGG TAKES AT OREGON PRIVATE AND STATE FACILITIES

SPRING CHINOOK EGGS TAKEN AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP) 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
BONNEVILLE	0	164,526	520,645	747,912	929,099	592,318	439,597
CEDAR CREEK	287,161	231,562	255,956	228,864	233,750	229,857	263,835
CLACKAMAS	2,514,261	2,445,158	2,529,088	2,555,007	2,516,954	1,987,354	1,950,000
COLE RIVERS	3,390,006	2,089,474	2,093,612	2,618,571	3,326,457	2,952,441	2,319,000
IRRIGON	0	74,785	27,542	0	0	0	0
LOOKINGGLASS	305,803	308,572	168,930	368,454	674,142	757,097	829,234
MARION FORKS	826,790	1,178,200	959,050	1,085,650	1,108,985	1,563,577	1,395,000
MCKENZIE	5,869,960	3,616,719	3,630,602	1,850,880	2,503,122	2,289,000	2,243,650
OAK SPRINGS	0	0	0	0	180,954	211,599	0
ROUND BUTTE	837,057	418,880	765,647	714,094	654,790	702,922	540,000
ROCK CREEK	27,771	42,852	85,286	69,870	122,499	152,172	28,841
SODA SPRINGS	460,980	460,968	621,912	527,529	570,888	580,040	563,588
SO. SANTIAM	2,460,757	2,010,781	2,112,340	2,288,380	2,462,040	2,545,338	2,301,600
TRASK	897,500	742,250	728,900	751,296	582,175	671,000	631,544
UMATILLA	1,029,237	455,953	942,988	1,120,995	1,175,281	1,017,113	1,008,000
WALLOWA	412,355	0	0	0	0	0	0
WILLAMETTE	3,650,917	2,895,015	3,255,794	2,887,510	2,448,000	3,342,168	3,274,993

WINTER CHINOOK EGGS TAKEN AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP) 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
TRASK	60,898	62,778	78,367	73,803	0	0	0

EGG TAKES AT OREGON PRIVATE AND STATE FACILITIES

SUMMER STEELHEAD EGGS TAKEN AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP) 1996-2002.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
CEDAR CREEK	414,969	436,320	435,303	447,246	431,724	430,941	287,332
COLE RIVERS	872,613	863,372	664,180	669,147	630,484	456,906	482,744
MID-COLUMBIA STLD	0	23,726	52,675	51,883	0	0	0
ROUND BUTTE	711,330	746,592	396,646	814,709	629,684	771,084	719,145
ROCK CREEK	196,753	245,530	264,079	389,012	349,966	252,480	297,825
SO. SANTIAM	1,205,500	3,075,376	2,239,854	2,417,560	2,207,711	1,970,650	1,977,200
UMATILLA	209,639	228,622	224,716	200,825	226,685	180,955	184,827
WALLOWA	3,663,649	4,586,729	3,092,408	2,616,909	1,637,142	1,851,671	1,675,663
PARKDALE	0	0	0	0	70,758	56,892	61,828

WINTER STEELHEAD EGGS TAKEN AT OREGON PRIVATE AND STATE OPERATED ENHANCEMENT FACILITIES INCLUDING SALMON TROUT ENHANCEMENT PROGRAM (STEP) 1997-2003.

FACILITY NAME	1997	1998	1999	2000	2001	2002	2003
STEP (COAST)	848,311	376,697	372,873	274,380	235,293	252,949	331,972
ALSEA	1,234,084	1,056,101	1,633,896	941,402	914,094	1,214,780	1,681,467
BANDON	224,819	327,800	388,541	273,511	295,010	254,580	292,252
BIG CREEK	601,314	144,398	883,776	384,447	53,417	283,157	309,536
CEDAR CREEK	453,763	468,304	634,834	507,473	507,801	475,714	267,370
CLACKAMAS	115,159	88,723	157,077	368,693	212,940	191,053	213,787
COLE RIVERS	1,614,101	1,261,199	1,068,155	1,021,857	1,093,141	936,446	857,669
ELK RIVER	127,770	108,091	183,984	149,326	191,968	174,795	111,752
FALL CREEK	138,770	147,510	0	0	0	0	0
KLASKANINE	375,260	149,328	0	427,024	240,785	0	0
MARION FORKS	171,000	240,000	0	0	0	0	0
MID-COLUMBIA STLD	125,805	85,376	111,707	0	0	0	0
NEHALEM	469,422	427,513	457,088	783,173	588,027	529,102	415,730
OAK SPRINGS	0	0	0	78,024	116,906	68,116	87,399
ROCK CREEK	158,349	196,984	374,560	197,039	182,661	321,623	211,100
SANDY	0	0	0	263,187	256,379	252,201	190,565
TRASK	67,560	45,648	108,850	124,037	104,520	85,062	99,232

IDAHO DEPARTMENT OF FISH AND GAME

New Production

No new production was undertaken at hatcheries operated by Idaho Department of Fish and Game this year. A variety of research continues to be undertaken by several agencies including cryopreservation of sperm on selected chinook stocks, and supplementation studies at various Idaho facilities.

Production

In Brood Years 2001-2002, spring and summer Chinook salmon brood escapements and egg takes approached full production levels. Smolt releases were (2002 was released already) near full capacity at several stations. The 2003-04 Brood Years are expected to be similar for spring and summer chinook returning to the Clearwater River, South Fork of the Salmon River, and Rapid River, and the upper Salmon River is expected to at or near hatchery goals. Snow pack was generally less than average for the 2004 out migration, affecting water conditions. Success of future hatchery production will be improved by good water conditions during out migrations.

Trends in Production

Hatchery production along with natural production have some upward trends, particularly in the 2001-2002 returns due to good out-migration conditions with sufficient water flows to aid smolt survival to the ocean. Good ocean conditions have also improved smolt-to adult survival, which has allowed some hatchery runs to rebound slightly. Some stocks are expected to continue to decline over time due to migration corridor constraints. Naturally produced fish continue to hang on but there is little optimism for expecting recovery in the near future.

Releases (1000s) of salmon and steelhead from Idaho Department of Fish and Game enhancement facilities for brood years 1990-2003.

Facility	Species	Stage	Brood Year 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	INC. 2003
Clearwater	Chinook spring	Smolt	0	552	1298	362	21	815	48	463	0	206	2038	377	
Clearwater	Steelhead summer	Smolt	0	14	774	588	791	681	702	596	735	787	573	872	1039
Crooked River	Chinook spring	Presmolt	0	0	416	0	0	0	601	396	85	246	0	750	
Powell	Chinook spring	Presmolt	8	0	100	0	0	0	334	294	213	750	0	391	
Red River	Chinook spring	Presmolt	0	0	321	0	0	0	361	159	0	249	0	355	
Rapid River	Chinook spring	Fry	0	0	0	0	0	0	0	0	0	0	0	0	
Rapid River	Chinook spring	Fingerlings	0	0	0	0	0	0	0	0	0	0	0	0	
Rapid River	Chinook spring	Smolt	3116	2928	3287	379	86	896	3347	2463	736	3470	2830	3562	
McCall	Chinook summer	Eyed eggs	0	0	0	0	0	0	0	0	0	0	0	0	
McCall	Chinook summer	Fry	0	0	0	0	0	0	0	0	0	0	0	0	
McCall	Chinook summer	Presmolt	0	0	0	0	0	0	0	0	179	47	0	0	
McCall	Chinook summer	Smolt	607	1060	1075	586	238	394	1183	1094	1165	1122	1127	1202	
Oxbow	Steelhead summer	Fry	0	0	0	0	0	0	0	0	0	0	0	0	
Magic Valley	Steelhead summer	Presmolt	0	0	0	0	0	0	0	0	0	0	0	0	
Magic Valley	Steelhead summer	Smolt	2160	1926	1919	1731	1868	1558	1659	1941	2048	2022	1900	1970	1796
Niagara Springs	Steelhead summer	Presmolt	0	0	0	0	0	0	0	0	0	0	0	0	
Niagara Springs	Steelhead summer	Smolt	1448	1645	1538	1702	1733	1754	1654	1843	1805	1931	1837	1856	1888
Pahsimeroi	Chinook summer	Smolt	375	131	147	0	122	66	136	54	283	508	1206	1108	
Pahsimeroi	Steelhead summer	Fry	0	0	0	0	0	0	0	0	0	0	0	0	
Sawtooth	Chinook spring	Eyed eggs	0	0	0	0	0	0	0	0	0	0	0	0	
Sawtooth	Chinook spring	Fry	0	0	0	0	0	0	0	0	0	0	0	0	
Sawtooth	Chinook spring	Fingerlings	0	0	0	0	0	0	0	0	0	0	0	0	
Sawtooth	Chinook spring	Presmolt	0	0	0	0	0	0	0	0	0	0	0	0	
Sawtooth	Chinook spring	Smolt	136	226	245	25	5	43	223	123	57	386	1105	821	
Sawtooth	Sockeye	Fry	0	0	0	0	0	0	0	0	0	0	0	0	
Sawtooth	Steelhead summer	Eyed eggs	0	0	0	0	0	0	0	0	0	0	0	0	
Sawtooth	Steelhead summer	Fry	0	0	0	0	0	0	0	0	0	0	0	0	
Sawtooth	Steelhead summer	Smolt	0	0	0	0	728	751	622	457	607	565	0	0	
Oxbow	Fall Chinook	Smolt	0	0	0	0	0	0	0	0	0	115	161	*541	
Eagle	Sockeye	Eyed eggs	0	0	0	0	0	0	0	0	0	0	0	0	
Eagle	Sockeye	Presmolt	0	0	0	0	0	0	0	0	72	106	0	0	
Eagle	Sockeye	Smolt	0	0	0	0	0	0	0	0	0	39	0	inc	

Does not Include NPT releases at CFH

*Includes fall chinook reared at Umatilla FH

Table: Totals by species and class of releases of salmon and steelhead from Idaho Department of Fish and Game enhancement facilities for brood years 1997 - 2002.

Species	Class	Brood Year					
		1997	1998	1999	2000	2001	2,002
Chinook-Spring	Presmolt	-			1,467,000	320,000	inc
	Smolt	5,568,000	3,897,361	2,828,829	6,208,432	5,972,986	inc
		5,568,000	3,897,361	2,828,829	7,675,432	6,292,986	
Chinook-Summer	Presmolt	-			46,975		
	Smolt	131,650	1,147,487	1,627,053	1,630,522	2,332,578	inc
		131,650	1,147,487	1,627,053	1,677,497	2,332,578	
Chinook - Fall	Smolt				115,220	161,271	541,487
		-	-	-	115,220	161,271	541,487
Steelhead-Summer	Smolt	4,615,452	4,824,940	4,837,687	5,304,963	4,309,883	4,698,810
		4,615,452	4,824,940	4,837,687	5,304,963	4,309,883	4,698,810
Sockeye	Eyed eggs	105,767		20,311	44,440	-	
	Presmolt	141,871	40,271	72,114	106,166	65,000	inc.
	Smolts	9,718		-	38,672	10,000	inc.
		257,356	40,271	92,425	189,278	75,000	

Adult salmon and steelhead escapement at Idaho Department of Fish and Game enhancement projects, 1991-2003.

		Return Year												
Species	**Facility Name**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Chinook	Rapid River	1,913	2,466	4,468	265	129	1,412	10,520	1,591	1,815	4,799	12,495	6,603	3,409
Spring	Sawtooth	566	387	587	96	37	156	254	153	196	986	2,103	1,786	1,236
(includes jacks)	East Fork Trap	62	65	90	15	0	10	7	not oper.	not oper.	not oper.	not oper.	not oper.	0
	Pahsimeroi	-	0	0	0	0	0	0		0	0	0	0	0
	Red River	18	39	139	31	4	62	280	90	31	315	1,333	623	298
	Powell	33	270	500	86	14	186	718	541	188	1,602	2,344	1,394	1,578
	Oxbow	69	934	431	29	36	78	944	74	79	1,159	not oper.	34	141
	Crooked River	20	228	402	26	6	299	1,034	277	125	1,157	2,013	1,336	1,360
	Subtotals	**2,681**	**4,389**	**6,617**	**548**	**226**	**2,203**	**13,757**	**2,726**		**10,018**	**20,288**	**11,776**	**8,022**
													*282	*122
Chinook	McCall	1,212	2,848	2,703	527	307	1,199	3,659	974	1,961	6,812	10,922	8,603	8,035
Summer	Pahsimeroi	238	131	169	36	80	89	147	127	377	459	1,097	1,122	2,747
(includes jacks)	**Subtotals**	**1,450**	**2,979**	**2,872**	**563**	**387**	**1,288**	**3,806**	**1,101**	**2,338**	**7,271**	**12,019**	**9,725**	**10,782**
Steelhead	Crooked River	49	53	49	6	17	2	182	2	10	21	7	8	13
Summer	Pahsimeroi	719	1,727	2,275	849	1,418	2,793	2,262	2,142	1,729	2,004	3,740	11,862	5,790
	Sawtooth	216	1,705	1,598	338	532	553	1,243	768	933	2,061	3,055	7,104	2,461
	East Fork Trap	119	156	176	73	38	47	149	27	56	48	62	38	47
	Squaw Cr. Pond									0	1	0	33	24
	Oxbow	1,151	1,714	1,259	1,403	1,597	1,383	1,270	2,407	2,042	2,250	3,256	4,979	4,002
	Subtotals	**2,254**	**5,355**	**5,357**	**2,669**	**3,602**	**4,778**	**5,106**	**5,346**	**4,770**	**6,385**	**10,120**	**24,024**	**12,337**
Sockeye	Redfish Lake	4	1	8	1	0	1	0	1	0	119	15	8	2
	Sawtooth	0	0	0	0	0		0	0	0	124	8	7	0
	Subtotals	**4**	**1**	**8**	**1**	**0**	**1**	**0**	**1**	**0**	**243**	**23**	**15**	**2**

Salmon and steelhead eggs taken at Idaho Department of Fish and Game enhancement facilities, 1996-2004.

Species	Facility Name	1996	1997	1998	1999	2000	2001	2002	2003	2004
Chinook	Rapid River	1,171,610	4,472,573	3,409,130	608,084	4,780,850	3,333,314	3,607,000	3,037,967	inc
Spring	Sawtooth	52,332	227,752	139,469	63,642	417,709	1,804,892	1,139,000	174,575	inc
	East Fork Trap	0	0	0	0	0	0	0	0	inc
	Pahsimeroi	0	0	0	0	0	0	0	0	inc
	Powell	275,883	948,387	897,993	126,815	2,035,086	2,067,596	1,931,000	992,694	inc
	Red River	40,156	1,810,913	330,054	21,739	715,014	1,484,173	1,728,000	1,559,700	inc
	Crooked River	274,332	w/Red R.	w/Red R.	w/Red R.	w/Red R.	w/Red R.	w/Red R.	w/Red R.	w/Red R.
	Totals	**1,814,313**	**7,459,625**	**4,776,646**	**820,280**	**7,948,659**	**8,689,975**	**8,405,000**	**5,764,936**	**0**
Chinook	McCall	486,644	2,523,059	1,433,237	1,892,572	1,487,809	1,139,385	1,804,000	2,167,000	inc
Summer	Pahsimeroi	85,983	171,836	371,354	371,354	633,906	1,699,097	1,293,000	1,587,300	inc
	Totals	**572,627**	**2,694,895**	**1,804,591**	**2,263,926**	**2,121,715**	**2,838,482**	**3,097,000**	**3,754,300**	inc
Steelhead	Pahsimeroi	5,398,600	3,910,369	5,366,086	3,962,649	4,411,135	4,764,652	3,927,479	5,150,000	4,747,200
Summer	Sawtooth	1,091,143	1,994,076	116,350	1,526,046	3,950,103	2,867,634	2,858,525	2,808,000	inc
	East Fork Trap	161,632	435,954	11,550	62,442	67,389	142,348	46,886	86,000	inc
	Squaw Cr. Pond						0	99,618	128,000	inc
	Oxbow	2,062,797	1,583,235	3,063,596	3,063,596	1,523,428	1,580,117	1,716,000	1,720,000	inc
	Totals	**8,714,172**	**7,923,634**	**8,557,582**	**8,614,733**	**9,952,055**	**9,354,751**	**8,648,508**	**9,892,000**	**4,747,200**

United States Fish and Wildlife Service

Trends in Production

US Fish and Wildlife Service production continues at around 39 million fish released per year.

2. 2004 ANNUAL REPORT ON THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2006.

3. 2005 ANNUAL REPORT ON THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2006.

4. 2004 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

Significant Changes in Program

The Salmonid Enhancement Program (SEP) has been operating with an annual deficit since 1996. In 2004, DFO initiated a review of SEP to determine if budget targets could be met without closing facilities and with least impact on objectives. Proposed changes to production were targeted to minimize impact on fisheries and focused where stocks are strong and there are large hatchery surpluses. This will affect the future availability of fish provided to First Nations through Escapement Surplus to Spawning Requirements (ESSR) arrangements. Production was maintained for all stocks enhanced for rebuilding objectives

Egg targets are determined pre-season for each stock. Return strength and difficulties in capturing broodstock because of environmental conditions or poor returns can limit success in achieving targets. Actual fecundity and in-hatchery survival rates will determine the number of juveniles released. Hatcheries may collect additional eggs to supply to other programs. These are not included in the following tables in the hatchery egg targets but are included in the actual eggs taken.

Chinook

Production continued at most sites with some changes in release strategies to increase operational efficiencies. Targets were reduced at other sites with significant rack surpluses. Current SEP tagging and mark sampling of the hatchery escapement of DFO stock assessment priority key stream projects was maintained.

In 2003, summer chinook returns to Puntledge were down compared to the previous two years. In 2004, extremely high summer water temperatures in the river resulted in higher than normal pre-spawn mortality of summer chinook. As a result, few eggs were collected. The Puntledge Summer Captive Brood program provided additional eggs to support this depressed run. Fall Chinook returns continued to improve in 2003 and 2004 and were strong enough to support a terminal as well as an in-river retention fishery.

Although CEDP hatcheries are not included in the tables, it should be noted that all brood 2004 chinook alevins incubating at Cowichan CEDP Hatchery were lost during a power outage caused by a winter storm and subsequent malfunction of the backup generator. According to guidelines, less than 1/3 of the returning adults had been collected for brood. Thus the remaining 2/3 of the run spawned naturally. Steps have been taken to prevent a reoccurrence.

West Coast chinook hatcheries experienced continued surplus returns in 2003 and targets were reduced for 2004 brood. The Conuma hatchery program incorporated Gold, Muchalat, Burman and Tahsis chinook. Due to concerns about straying from Robertson Creek Hatchery, eggs collected from Gold and Muchalat were kept in separate trays until otolith readings could confirm the origin of the broodstock. Progeny of Robertson strays were released as small fry while native stock were reared to smolt.

Chinook targets at North Coast facilities were obtained except for 2003 brood Wannock River chinook because of poor adult returns. Enhancement of other small central coast stocks and remnant Pallant Creek chinook occurred opportunistically

Chinook Production		2003 Brood (million)		2004 Brood (million)		
Hatchery	Stock	Target Smolt Release	Actual Smolt Release	Target Smolt Release	Egg Target	Eggs Attained
B Qualicum	B Qualicum	3.74	3.71	3.74	4.50	4.80
Capilano	Capilano	0.56	0.42	0.56	0.90	0.97
Chehalis	Harrison Fall	2.35	1.33	2.35	3.00	3.28
	Summer Red	0.39	0.26	0.39	0.50	0.56
Chilliwack	Chilliwack Fall	1.20	1.22	1.20	1.50	1.57
	Summer Red	0.41	0.50	0.41	0.50	0.58
Conuma	Burman	0.40	0.40	0.40	0.50	0.55
	Conuma	2.40	2.68	1.70	2.10	2.37
	Gold	0.04	0.00	0.04	0.05	0.63
	Muchalat	0.12	0.01	0.12	0.15	0.005
	Sucwoa	0.04	0.00	0.04	0.05	0.04
	Tahsis/Leiner	not appl[2]	not appl[2]	not appl[2]	0.38	0.20
	Tlupana	0.04	0.06	0.04	0.05	0.05
Inch	Stave	0.21	0.29	0.21	0.29	0.27
	Maria Slough	0.07	0.07	0.07	0.10	0.10
L Qualicum	L Qualicum	2.50	2.97	2.50	3.50	3.23
Nitinat	Nitinat	3.00	3.54	2.00	2.50	3.19
	Sarita	0.50	0.59	0.50	0.55	0.43
Puntledge	Punt Fall	1.80	2.16	1.55	2.00	1.88
	Punt Summer	2.00	1.37	2.00	2.40	0.95
Quinsam	Quinsam	3.40	3.13	3.15	4.15	4.06
Robertson	Nahmint	0.43	0.05	0.43	0.50	0.06
	Robertson	7.20	8.13	6.00	7.20	7.48
Shuswap	Shuswap Low	0.85	0.70	0.50	0.70	0.53
	Shuswap Mid	0.25	0.25	0.25	0.30	0.33
Spius	Coldwater	0.07	0.09[1]	0.05	0.09	0.09
	Nicola	0.14	0.16[1]	0.12	0.16	0.17
	Salmon	0.07	0.06[1]	0.07	0.12	0.12
	Spius	0.07	0.03[1]	0.05	0.09	0.11
Tenderfoot	Tenderfoot	1.20	1.15	1.20	1.40	1.31
Total South Coast		35.45	35.33	31.64	40.23	39.92
Kitimat	Hirsch	0.20	0.20	0.20	0.25	0.24
	Kitimat	1.40	1.29	1.40	1.70	1.51
Pallant	Pallant	0.04	0.002	0.04	0.05	0.00
Snootli	Atnarko	1.80	1.93	1.80	2.10	1.91
	Noosgulch	0.04	0.00	0.04	0.05	0.005
	Nusatsum	0.09	0.04	0.09	0.10	0.06
	Salloomt	0.09	0.006	0.09	0.10	0.07
	Wannock	0.09	0.01	0.09	0.10	0.12
Total North Coast		3.75	3.49	3.75	4.45	3.92

[1] fry rearing for release in 2005 as yearling smolts

[2] Parnership with community. Conuma Hatchery incubates the eggs for release by Tahsis Enhancement Group.

Coho

Production continued for all stocks enhanced for fishery objectives at projects operated by DFO staff. However, 2004 brood coho targets were reduced 20-25% at most Southern B.C. facilities to decrease rack surpluses while maintaining fishery opportunities for recreational, commercial and First Nations. Fishing opportunities should be maintained on all stocks, but there will be somewhat fewer fish available for catch. Reductions to rack surpluses will impact future First Nations ESSR harvest. Current SEP tagging and mark sampling of the hatchery escapement of DFO stock assessment priority keystream projects was maintained.

Adipose marking of coho on hand (2003 brood) was reduced to the 2004 brood production level, with the balance left unclipped. 2003 brood smolts will be released in the spring of 2005. All 2004 brood hatchery production for harvest objectives will be marked to ensure that returns are available to the fishery. Stocks which are mass marked are noted with an asterisk in the following table. In addition, community hatcheries will release 2003 brood smolts for potential small hatchery mark-selective fisheries on Alouette, Kanaka, Mossom, Noons, Seymour, Serpentine, Nicomekl, Little Campbell, and Coquitlam rivers in the Lower Mainland, Chapman and Lang creeks on the Sunshine Coast and Fanny Bay, Nanaimo, San Juan and Quatse river on the Vancouver Island. Production of Conuma coho was discontinued, and future harvest in this area will be managed for natural stocks.

Production of fry and smolt releases was maintained for all South Coast stocks enhanced for rebuilding objectives. 2003 brood coho fry (2004 release) are not included in the following release table. There were no eggs collected for 2003 brood Duteau coho (Shuswap Hatchery) due to insufficient returns of this depressed stock. All 2004 brood production will be released as fry. Spius Creek coho enhancement was discontinued, as the stock is healthy, and will be monitored for post-enhancement success.

No changes were made to coho targets for North Coast facilities. The egg target at Pallant Creek Cost Recovery Pilot, operated in partnership with the Haida Tribal Society, was increased in 2003 about 15% to accommodate cost recovery objectives. The egg target was achieved for 2003 brood, but in 2004 less than half the desired eggs were collected due to lower than forecasted returns. The river escapement numbers were met.

Coho Production		2003 Brood (million)		2004 Brood (million)		
Hatchery	Stock	Target Release	Projected Release[1]	Target Release	Egg Target[2]	Eggs Attained
B Qualicum	B Qualicum *	1.25	1.29	1.00	2.00	2.19
Capilano	Capilano *	0.63	0.63	0.63	1.50	1.73
Chehalis	Chehalis *	0.90	1.04	0.80	1.10	1.07
Chilliwack	Chilliwack *	1.95	1.84	1.20	1.70	1.54
Conuma	Conuma	0.10	0.14	0.00	0.00	0.00
Inch	Inch *	0.15	0.16	0.15	0.19	0.24
	Nicomekl *	0.08	0.01	0.08	0.09	0.10
	Norrish *	0.15	0.15	0.15	0.19	0.19
	Serpentine *	0.08	0.06	0.08	0.09	0.15
	Stave *	0.23	0.22	0.23	0.28	0.23
Nitinat	Nitinat *	0.20	0.23	0.20	0.50	0.54
Puntledge	Puntledge *	0.80	0.54	0.60	0.90	1.08
Quinsam	Quinsam *	1.10	1.12	0.80	1.13	1.39
Robertson	Robertson *	0.80	0.83	0.60	0.74	0.74
Shuswap	Duteau	0.00	0.00	0.60	0.74	0.66
	Shuswap Mid	0.00	0.15	0.00	0.00	0.00
Spius	Coldwater	0.07	0.05	0.07	0.14	0.14
	Deadman	0.03	0.04	0.03	0.04	0.04
	Salmon	0.03	0.002	0.03	0.17	0.18
	Spius	0.08	0.06	0.00	0.00	0.00
Tenderfoot	Ashlu	0.04	0.04	0.04	0.05	0.09
	Mamquam *	0.04	0.04	0.04	0.05	0.07
	Squamish	0.04	0.04	0.04	0.05	0.09
	Tenderfoot *	0.10	0.13	0.10	0.13	0.33
Total South Coast		8.85	8.81	7.47	11.78	12.79
Kitimat	Kitimat	0.50	0.41	0.50	0.60	0.73
Pallant Pilot	Pallant	0.54	0.53	0.54	1.08	0.50
Snootli	Snootli/Salloomt	0.01	0.00	0.01	0.02	0.02
Total North Coast		1.05	0.94	1.05	1.70	1.25

[1] Fry rearing for release as smolts in 2005. Some or all are mass marked with an adipose clip for Mark Selective Fishery opportunities (stocks identified with *).

[2] Egg Target includes eggs for fry releases but not for transfer to other facilities or research.

Chum

Production continued for stocks at projects operated by DFO staff. Small changes were implemented at Conuma Hatchery to accommodate changes to Area objectives. Deserted chum enhancement was discontinued and area/time boundaries will be used to protect this stock from fisheries occurring on other Nootka Sound chum stocks. Egg deposition targets were not achieved for Big and Little Qualicum channels. The Chehalis chum target reflects a partnership arrangement with Chehalis First Nation. Targets were achieved at both Snootli and Kitimat hatcheries. Pallant Creek Hatchery is operated by the Haida Tribal Society as a cost recovery pilot hatchery. Egg targets were increased for 2002 brood to accommodate cost recovery objectives but returns have been disappointing to date. Total chum returns in 2003 and 2004 to Pallant Creek and Mathers Creek were less than half the forecast return and egg targets were not met. The cost recovery harvest was approximately 19% of the total harvest, with the commercial fishery consisting of a test fishery only.

Chum Production

		2003 Brood (million)		2004 Brood (million)		
Hatchery	Stock	Target Fry Release	Actual Fry Release	Target Fry Release	Egg Target	Eggs Attained
BQualicum Chan	B Qualicum	54.00	24.51	54.00	125.00	49.05
Chehalis	Chehalis	6.00	5.91	6.00	6.400	6.84
Chilliwack	Chilliwack	1.10	1.74	1.10	1.200	2.10
Conuma	Canton	1.00	0.48	1.00	1.200	0.72
	Conuma	2.00	1.59	2.00	2.600	2.36
	Deserted	1.70	0.80	0.00	0.00	0.00
	Sucwoa	1.70	0.41	1.00	1.20	1.15
	Tlupana	1.00	0.43	1.00	1.20	1.07
Inch	Inch	1.00	0.83	1.00	1.20	1.20
LQualicum Chan	L Qualicum	38.00	12.93	38.0	62.00	31.36
Nitinat	Nitinat	35.00	23.77	35.00	42.00	40.86
Puntledge	Puntledge	3.60	3.67	3.60	4.00	4.34
Tenderfoot	Tenderfoot	0.08	0.15	0.36	0.40	0.43
Weaver Chan	Weaver	2.70	1.66	2.70	4.13	4.81
Total South Coast		148.88	65.95	146.76	252.53	146.29
Kitimat	Hirsch	1.00	0.96	1.00	1.20	1.11
	Kitimat	3.50	3.38	3.50	4.00	3.94
Pallant Pilot	Mathers	4.28	0.00	4.28	5.00	0.00
	Pallant	21.38	9.15	21.38	25.00	3.32
Snootli	Fish/Airport	1.66	1.78	1.66	1.80	1.70
	Salloomt	1.66	1.69	1.66	1.80	1.82
	Snootli	1.66	1.69	1.66	1.80	1.79
	Thorsen	1.66	1.74	1.66	1.80	1.77
Total North Coast		36.80	20.39	36.80	42.40	15.45

Pink

Production was maintained at projects operated by DFO staff in partnership with communities. All eggs at the Puntledge Hatchery were collected from returns to Quinsam Hatchery, leaving returning adults to spawn naturally in the Puntledge/Tsolum rivers. Traditionally, significant additional eggs are taken at Quinsam to support transfers into East Coast Vancouver Island streams by community partners. Due to the unusually low return of pink to the Quinsam/Campbell, very few 2004 brood eggs were available to transfer to other projects. There is no significant even year pink production on the Fraser River and no managed channels or hatcheries for pinks on the North Coast.

Pink Production		2003 Brood (million)		2004 Brood (million)		
Hatchery	Stock	Target Fry Release	Actual Fry Release	Target Fry Release	Egg Target	Eggs Attained
Puntledge	Puntledge	2.40	2.30	2.40	3.50	2.80
Quinsam	Quinsam	7.00	6.21	7.00	7.80	6.30
Weaver Chan	Weaver	0.92	0.69	off year	off year	off year
Total		12.72	9.20	9.40	11.30	9.10

Sockeye

No changes were proposed to sockeye production from managed channels or hatcheries.

In 2003, the old Upper Pitt hatchery site was taken out of service and eyed eggs were transferred to a new satellite facility at Inch Creek Hatchery. This isolation facility is also being used to rebuild Cultus Lake sockeye. Some eggs from 2003 and 2004 brood Cultus Lake were set aside for captive brood purposes and are being reared at Rosewall Creek Hatchery on Vancouver Island. The remainder were incubated and reared at Pitt Satellite facility for a fall release to Cultus Lake. Eggs were also collected in 2003 and 2004 from mature captive brood adults. Rosewall Creek is also rearing Sakinaw captive brood sockeye in conjunction with a community facility. Sakinaw sockeye fry not required for captive brood are released to Sakinaw Lake.

An average escapement to Weaver Creek in 2003 resulted in the creek being loaded to less than 50% capacity. The channel, however, was loaded to full capacity and the pre-spawning mortality rate remained fairly low, resulting in strong fry production . In 2004, a low escapement resulted in the channel being loaded to near capacity, with very few fish spawning in the creek.

For brood year [illegible], both Gates Creek and Nadina River channels experienced fairly low escapements. Given an extremely low escapement and high water conditions, the Horsefly spawning channel was not loaded in the fall of 2004.

For the fall of 2003, spawner targets to the Babine Lake Development Project were met, with moderate numbers of surplus fish returning to both projects. Fortunately, due in part to cool summer temperatures, no outbreaks of either ICH or Loma were experienced. Given the calculated egg depositions, high survival rates resulted in very strong fry

production in the spring of 2004. For the fall of 2004, a strong escapement was experienced at Fulton and a moderate escapement at Pinkut. All targets were met with the exception of the Pinkut airlift, which was cancelled due to insufficient numbers of fish available early enough in the run to justify the operation.

Egg targets for the Rivers/Smith Inlet sockeye programs are adjusted in-season based on the abundance of adults returning. No eggs were collected in 2003 or 2004 from Long Lake stocks due to healthy returns. Eggtakes continued for depressed Owikeeno Lake stocks.

Sockeye		2003 Brood (million)		2004 Brood (million)		
Hatchery	Stock	Target Fry Release	Actual Fry Release	Target Fry Release	Egg Target	Eggs Attained
Gates Chan	Gates	4.50	5.81	4.50	9.00	15.80
Horsefly Chan	Horsefly	17.50	27.00	17.50	35.00	0.00
Nadina Chan	Nadina	3.50	1.60	3.50	7.00	12.30
Weaver Chan	Weaver	46.80	45.23	46.80	65.00	53.53
Pitt Satellite	Upper Pitt	2.00	2.34	2.00	2.50	2.05
	Cultus	0.35	0.35	0.75	1.00	1.00
Ouillet	Sakinaw	0	0			0.04
Shuswap	Okanagan	0.35	0.35	1.30	1.40	1.40
Total South Coast		75.00	82.68	76.35	120.90	86.12
Babine Lake	Fulton Chan	102.00	126.00	102.00	204.00	213.00
Develop't	Fulton R	45.00	41.00	45.00	300.00	486.60
Project	Pinkut Chan	43.50	74.00	43.50	87.00	89.10
	Pinkut Cr	5.700	19.00	5.700	38.00	39.10
	Pinkut Airlift	9.00	0.00	9.00	60.00	0.00
Snootli	Owikeeno L	0.44	0.46	0.44	0.55	0.57
	Long Lake	0.16	0.00	0.16	0.20	0.00
Total North Coast		205.8	260.46	205.8	689.75	828.37

5. 2005 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

This report had not been received by March 31, 2006

Reports of the Joint Technical Committees

PART V
REPORTS OF THE JOINT TECHNICAL COMMITTEES

Executive summaries of reports submitted to the Commission by the joint technical committees during the period April 1, 2004 to March 31, 2005 are presented in this section. Copies of the complete reports are available from the library of the Pacific Salmon Commission.

A. JOINT CHINOOK TECHNICAL COMMITTEE

STANDARDIZED FISHING REGIME FOR NORTHERN BRITISH COLUMBIA TROLL AND QUEEN CHARLOTTE ISLANDS SPORT FISHEIRES. TCCHINOOK (05)-1 – June 17, 2005

The Governments of Canada and the United States of America agreed as part of the Pacific Salmon Treaty 1999 Revised Annexes (the Agreement) to *"adopt a management framework for Chinook salmon based on total fishing mortality."* The parties identified the uncertainty in estimates of incidental mortality and agreed that until improvements based on direct fishery observations could be implemented that *" total adult equivalent fishing mortality in each Aggregate Abundance Based Management (AABM) fishery shall be constrained by expressing the fishery management objective as a target catch index and a standardized management regime (e.g., minimum size limit of x, ratio of encounters in Chinook retention to Chinook non-retention periods not to exceed y)."* This provision ensures that until such time as a total fishing mortality regime is implemented, AABM fisheries would continue to be managed in a manner consistent with how these fisheries were conducted at the time of the signing of the 1999 Agreement. The AABM fishery considered here is described in the Agreement as *"Northern British Columbia (NBC) troll (statistical areas 1-5) and Queen Charlotte Islands (QCI) sport (statistical areas 1 and 2)".*

Standardized regime descriptions were meant to detail how AABM fisheries would be conducted under the 1999 Agreement. Such "benchmarks" would facilitate an assessment of whether the implementation of AABM regimes is having the expected effects on the relationship between catch and incidental mortality. This description will attempt to provide a baseline to compare future changes in incidental mortalities of Chinook salmon for the AABM regime. This description describes how the fishery would have been conducted in the absence of domestic constraints and attempts to provide realistic scenarios regarding sector allocation of catch and Chinook non-retention (CNR) at low, medium and high abundance indices. Details of Canada's actual domestic management and conduct of the 1999 fishery appear in Appendix 1, with a history of NBC Troll and QCI sport fisheries provided in Appendix 2.

CATCH AND ESCAPEMENT OF CHINOOK SALMON UNDER PACIFIC SALMON COMMISSION JURISDICTION, 2004 TCCHINOOK (05)-2 – October 26, 2005

The June 30, 1999, Pacific Salmon Treaty (PST) Annexes and Related Agreements (Agreement) substantially changed the objectives and structure of the Pacific Salmon Commission's (PSC) Chinook salmon fisheries and assessment of Chinook salmon stocks. The Agreement eliminated the previous ceiling and pass-through fisheries and replaced them with Aggregate Abundance Based Management (AABM) and Individual

Stock Based Management (ISBM) fisheries. It also tasked the Chinook Technical Committee (CTC) with a number of assignments (Appendix to Annex IV, Chapter 3).

In this report, we provide a summary of 2004 fishery catches by region and an assessment of escapement for those stocks that have CTC accepted goals. In addition, escapement data and agency comments have been provided for all escapement indicator stocks. We will also provide a second annual report that summarizes the exploitation rate analysis and the results of the CTC model calibration as was done last year (see CTC 2004a). Model calibration results will include postseason statistics for the 2004 fisheries and preseason predictions for the 2005 fisheries.

CHINOOK CATCH 2004

Only catches, incidental mortalities, and some fishery effort estimates are presented in this report. Assessment of the AABM and ISBM fishery performance requires more detailed analyses using coded-wire tag (CWT) data and calibration of the CTC model. As was done in 2003, these analyses will be reported in the annual Exploitation Rate and Model Calibration Report (e.g., CTC 2004a).

In keeping with the move towards a total mortality regime, both landed catch and estimates of incidental mortality are provided in this report for each component of each AABM fishery for 2003 and 2004, similar to what was done for the 2003 report (CTC 2004b). Commentary on these fisheries is also provided, as in previous reports. One difference from the 2003 report is that catch and estimates of incidental mortality for each ISBM fishery are also included in this report. Similar to the 2003 report, landed catch is reported in appendices for each geographic area covered under the PST.

ESCAPEMENTS THROUGH 2004

The escapement review includes 50 naturally spawning escapement indicator stocks/stock aggregates. Biologically-based escapement goals have been accepted by the CTC for 23 of the 50 escapement indicator stocks/stock aggregates. For 12 of these stocks, the agency escapement goal is defined as a range; for the remaining 11 stocks, the escapement goal is the point estimate of S_{MSY} (escapement producing maximum sustained yield). In 2004, escapements were within the goal range for seven stocks, above the range or S_{MSY} point estimate for 15 stocks, and below the goal range for one stock. It was not possible to provide this assessment for the other stocks without accepted escapement goals. However, data for other stocks are presented to illustrate trends in escapement. Some stocks are managed to an agency goal, but these goals have not been accepted by the CTC. The CTC will continue to review escapement goals brought forth for the remaining stocks, as they are provided.

ANNUAL EXPOLITATION RATE ANALYSIS AND MODEL CALIBRATION TCCHINOOK (05)-3 – December, 2005

This report contains the results of the Chinook Technical Committee (CTC) annual exploitation rate assessment and the final preseason Chinook model calibration for 2005 (CLB 0506). Results include the Abundance Indices (AIs) for the Aggregate Abundance Based Management (AABM) fisheries and Individual Stock Based Management (ISBM) Indices for each party (country) and a summary of preseason forecast methods by stock.

AABM Abundance Indices and Associated Catches

The AIs for the three AABM fisheries, i.e., Southeast Alaska All Gear (SEAK), Northern British Columbia Troll and Queen Charlotte Islands Sport (NBC), and West Coast Vancouver Island Troll and Outside Sport (WCVI), are presented in Table 1. The 1999 Agreement specified that the AABM fisheries were to be managed through the use of the AIs. Preseason AIs are used to set allowable catch limits for management in the upcoming fishing season. Subsequently, postseason AIs (from the following year's calibration) are used to track overage and underage provisions. Each calibration provides the first postseason AIs for the previous year and the preseason AIs for the current year. The first 2004 postseason AIs and the 2005 preseason AIs have now been finalized.

Table 1. Abundance Indices for 1999 to 2005 for the SEAK, NBC, and WCVI AABM fisheries.

	SEAK		NBC		WCVI	
Year	**Preseason**	**Postseason**	**Preseason**	**Postseason**	**Preseason**	**Postseason**
1999	1.15	1.12	1.12	0.97	0.60	0.50
2000	1.14	1.10	1.00	0.95	0.54	0.47
2001	1.14	1.29	1.02	1.22	0.66	0.68
2002	1.74	1.82	1.45	1.63	0.95	0.92
2003	1.79	2.17	1.48	1.90	0.85	1.10
2004	1.88	2.06	1.67	1.83	0.90	0.98
2005	2.05		1.69		0.88	

In general, the AIs for 1999 through 2001 are low compared to AIs in the late 1980s and early 1990s but values have increased since 2002. The recent AI values are comparable to the higher values in the time series. The Agreement specifies an allowable catch for each AI for each fishery. The specified Treaty catch by fishery and year and the actual (observed) catches are shown in Table 2.

Table 2. Observed catches and postseason allowable catches for 1999 to 2004, and preseason allowable catches for 1999 to 2005, for AABM fisheries.

	Pacific Salmon Treaty Allowable and Observed Catches								
	SEAK			NBC			WCVI		
Year	Preseason Allowable Catch	Postseason Allowable Catch	Observed Catch	Preseason Allowable Catch	Postseason Allowable Catch	Observed Catch	Preseason Allowable Catch	Postseason Allowable Catch	Observed Catch
1999	192,800	184,200	198,842	145,600	126,100	86,726	128,300	107,000	36,413
2000	189,900	178,500	186,493	130,000	123,500	31,900	115,500	86,200	101,438
2001	189,900	250,300	186,919	132,600	158,900	43,500	141,200	145,500	117,670
2002	356,500	371,900	357,133	192,700	237,800	150,137	203,200	196,800	165,036
2003	366,100	439,600	380,152	197,100	277,200	191,657	181,800	268,900	175,821
2004	383,500	418,300	428,773[1] 433,446	243,600	267,000	241,508	192,500	209,600	216,166
2005	416,400	-	-	246,600	-		188,200	-	-

[1] The lower value results from subtracting a terminal exclusion catch for the Stikine River in 2004, which is in dispute.

The Agreement specifies that overage/underage provisions apply to both AABM and ISBM fisheries. However, the CTC identified, in a February 12, 2002 letter to the PSC, major technical obstacles and policy concerns for adjusting harvest levels in response to overages and underages. The major problem identified for AABM fisheries is the confounding of forecast and management error in assessing overages and underages. Forecast error is associated with the accuracy of the preseason Abundance Indices (Table 1) which in turn is used to determine the preseason estimate of allowable catch. Management error is related to the harvest manager's ability to attain the preseason estimates of allowable catch. Harvest managers have no prior knowledge of the postseason estimate of allowable catch, which can be quite different from the preseason estimate (Table 2).

Until an approach for full implementation has been developed and accepted by the PSC, the Commissioners have instructed the CTC to track overages and underages relative to agreed-upon harvest objectives. Table 3 shows the difference between the postseason allowable catch and the observed catch in AABM fisheries for 1999–2004, and the cumulative differential for those years. All three AABM fisheries have cumulative underages. In SEAK, observed catches have been below final allowable catches for three of the six years; the cumulative differential is –5.7% or –5.4%, depending on how the terminal exclusion for the Stikine River in 2004 is treated. In NBC, observed catches have been below the final allowable catches in all six years; the cumulative differential is –37.4%. In WCVI, observed catches have been below allowable catches in four of the six years; the cumulative differential is –19.9%.

Table 3. Differences between observed Treaty catch and the postseason Treaty allowances as number of fish and percentages of allowable catch for AABM fisheries in 1999 to 2004.

Year	SEAK		NBC		WCVI	
	Number of Fish	Percent Difference	Number of Fish	Percent Difference	Number of Fish	Percent Difference
1999	+14,642	+7.9%	-39,374	-31.2%	-70,587	-66.0%
2000	+7,993	+4.5%	-91,600	-74.2%	+15,238	+17.7%
2001	-63,381	-25.3%	-115,400	-72.6%	-27,830	-19.1%
2002	-14,767	-4.0%	-87,663	-36.9%	-31,764	-16.1%
2003	-59,448	-13.5%	-85,543	-30.9%	-93,079	-34.6%
2004	+10,473 +15,146	+2.5% +3.6%	-25,492	-9.5%	+6,566	+3.1%
Cum.	-104,488 -99,815 [1]	-5.7% -5.4%	-445,072	-37.4%	-201,456	-19.9%

[1] The lower value results from subtracting a terminal exclusion catch for the Stikine River in 2004, which is in dispute.

ISBM Indices

For ISBM fisheries, the Agreement specified that Canada and the United States would reduce base period exploitation rates on specified stocks by 36.5% and 40%, equivalent to ISBM indices of 63.5% and 60% percent, respectively. This requirement is referred to as the 'general obligation' and does not apply to stock groups that achieve their CTC agreed escapement goals. Estimated ISBM fishery indices are shown in Table 4 for Canadian fisheries and Table 5 for United States (U.S.) fisheries. Both tables present coded-wire tag (CWT)-based indices for 2003, and Chinook model-based indices for 2005. The agreement specifies that the ISBM indices be forecasted preseason and evaluated postseason for each escapement indicator stock listed in Attachments I to V of the Chinook Chapter.

CWT-based Indices in 2003

All Canadian ISBM indices from the CWT-based estimates for 2003 show that exploitation rates were reduced more than required under the agreement for all stocks or stock groups for which the indices could be calculated. Two of the 15 U.S. ISBM indices for the CWT-based estimates for 2003 were reduced more than required under the agreement. Of the 13 U.S. CWT-based ISBM indices that exceeded 0.60, ten (Upriver Brights, Quillayute, Queets, Hoh, Lewis, Harrison, Mid-Columbia Summers, Nehalem, Siletz, and Siuslaw) have agreed escapement goals and all ten exceeded their goals in 2003.

Predicted ISBM Indices for 2005

Seven of the 19 ISBM indices for Canada in 2005 based on outputs from calibration 0506 are above the allowable value of 0.635 for Canadian ISBM fisheries. Of the seven, only far north migrating Oregon Coast and Upriver Brights have CTC agreed escapement goals. Ten of the 24 U.S. ISBM indices for 2004 based on calibration 0506 are above the allowable limit of 0.60 for U.S. ISBM fisheries. Nine of the 10 have CTC agreed escapement goals: Queets, Hoh, Quillayute, Upriver Brights, Lewis, Harrison, Nehalem, Siletz, and Siuslaw.

Table 4 Canadian 2003 ISBM indices based on CWT and the 2005 indices predicted from the PSC Chinook Model

Stock Group	Escapement Indicator Stock	Canadian ISBM Indices	
		CWT Indices for 2003	Model Indices for 2005
Lower Strait of Georgia	Cowichan	0.363 [4]	
	Nanaimo	NA [1,5]	0.381 [6]
Fraser Late	Harrison River [2]	0.055 [7]	0.332
North Puget Sound Natural Springs	Nooksack	0.046	0.314
	Skagit	NA	0.314
Upper Strait of Georgia	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	0.006	0.649
Fraser Early (spring and summers)	Upper Fraser, Mid Fraser, Thompson	NA	0.654
West Coast Vancouver Island Falls	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	0.496 [8]	0.728
Puget Sound Natural Summer / Falls	Skagit	NA	0.465
	Stillaguamish	NA	0.587
	Snohomish	NA	0.457
	Lake Washington	NA	0.497 [9]
	Green River	0.328	0.497 [9]
North / Central B. C.	Yakoun, Nass, Skeena, Area 8	NA	0.680
Washington Coastal Fall Naturals [3]	Hoko, Grays Harbor, Queets [2], Hoh [2], Quillayute [2]	NA	0.457
Columbia River Falls [3]	Upriver Brights [2]	NA	0.640
	Deschutes	NA	0.640
	Lewis [2]	NA	0.546
Columbia R Summers [3]	Mid-Columbia Summers [2]	NA	0.406
Far North Migrating OR Coastal Falls [3]	Nehalem [2], Siletz [2], Siuslaw [2]	NA	0.674

[1] Not available (NA) because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).

[2] Stock or stock group with a CTC agreed escapement goal.

[3] Stock group listed in Annex 4, Chapter 3, Attachment V.

[4] An inconsistency was discovered between the approaches used to calculate the model-based and CWT-based indices. The former included harvest rates for terminal sport while the latter did not. Terminal sport harvest rates are now included in the calculation of both indices. Further review is yet required to determine whether the base period terminal sport harvest rates obtained from analyses of Big Qualicum CWT recoveries adequately represent impacts that would have occurred on Cowichan Chinook.

[5] Several problems have been identified in the approach previously used to calculate the CWT-based indices for Nanaimo Chinook. Until these problems are resolved, indices for this stock will not be reported.

[6] Although model-based indices were previously calculated separately for Cowichan and Nanaimo, these did not adequately represent impacts on either LGS stock because the model-based data represent an aggregate of the two stocks and methods do not currently exist to correctly disaggregate these data for calculation of the ISBM values. Until such methods are developed, a single index value only will be reported representing the aggregate.

[7] The terminal sport harvest rates for Chilliwack Hatchery Chinook, the indicator stock, were removed from the calculation for the Harrison River naturals because sport harvest has been essentially zero on the natural population.

[8] An inconsistency was discovered between the approaches used to calculate the model-based and CWT-based indices. The former included harvest rates for terminal sport while the latter did not. Terminal sport harvest rates are now included in the calculation of both indices. A more extended review of the indices for WCVI Chinook will be carried out to determine whether they adequately represent impacts on the WCVI wild aggregate.

[9] For Canadian ISBM fisheries, Lake Washington and Green the same distribution and Index value are assumed.

Table 5. U.S. 2003 ISBM indices based on CWT and the 2005 indices predicted from the PSC Chinook Model. Order of the stock groups corresponds to Annex 4, Chapter 3, Attachment V of the PST 1999 Revised Annexes.

		U.S. ISBM Indices	
Stock Group	**Escapement Indicator Stock**	**CWT Indices for 2003**	**Model Indices for 2005**
Washington Coastal Fall Naturals	Hoko	NA [1]	0.444
	Grays Harbor	0.150	0.222
	Queets [4]	0.850	1.023
	Hoh [4]	1.340	1.499
	Quillayute [4]	0.990	1.133
Columbia River Falls	Upriver Brights [4]	1.430	0.734
	Deschutes	0.490	0.483
	Lewis [4]	1.030	1.058
Puget Sound Natural Summer / Falls	Skagit	NA	0.195
	Stillaguamish	NA	0.185
	Snohomish	NA	0.891
	Lake Washington	NA	0.373
	Green R	1.030	0.202
Fraser Late	Harrison River [4]	0.640	0.670
Columbia R Summers	Mid-Columbia Summers [4]	10.040	0.545
Far North Migrating OR Coastal Falls	Nehalem [4]	3.110	2.090
	Siletz [4]	1.590	1.233
	Siuslaw [4]	3.820	2.643
North Puget Sound Natural Springs	Nooksack	NA	0.222
	Skagit	NA	0.213
Lower Strait of Georgia [3]	Cowichan,	4.990	0.407
	Nanaimo	4.990	0.407
Upper Strait of Georgia [3]	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	NA	NC [2]
Fraser Early (spring and summers) [3]	Upper Fraser, Mid Fraser, Thompson	NA	0.257
West Coast Vancouver Island Falls [3]	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	NA	0.290
North / Central B. C. [3]	Yakoun, Nass, Skeena, Area 8	NA	NC

[1] Not available (NA) because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).
[2] NC means that the current model assumes the stock is not caught in U.S. ISBM fisheries.
[3] Stock group listed in Annex 4, Chapter 3, Attachment IV.
[4] Stock with a CTC agreed escapement goal.

Stock Forecasts

In general, the model does a very good job of matching the agency-supplied forecasts (average error =-0.7%, standard deviation =13%, median error = -0.9%). Agency forecasts are, on average, also good predictors of observed returns (average error = -10%, standard deviation = 40%, median error = -11%). The model's prediction of observed returns, including stocks for which there are agency forecasts, is also good (average error =-6%, standard deviation =36%, median error = -9%).

B. JOINT CHUM TECHNICAL COMMITTEE

No reports were finalized for publication during this reporting period.

C. JOINT COHO TECHNICAL COMMITTEE

No reports were finalized for publication during this reporting period.

D. JOINT NORTHERN BOUNDARY TECHNICAL COMMITTEE

STOCK COMPOSTION ESTIMATES AND INDIVIDUAL STOCK ASSIGNMENTS BASED ON GENETIC MICROSATELLITES AND SCALE PATERNS FOR TEST MISTURES OF ALASKAN AND CANADIAN SOCKEYE SALMON.

TCNB (05)-2 – June, 2005

This study compares the merits and compatibility of two methods currently used to estimate US and Canadian contributions of sockeye salmon to commercial fishery catches in the Pacific Salmon Treaty Northern Boundary Area (NBA). Scale pattern analysis (SPA) has been used since 1982 to estimate contributions in SE Alaskan fishery catches, and provided the run reconstruction baseline information to establish certain sharing agreements of the Pacific Salmon Treaty. Genetic stock identification (GSI) techniques based on DNA microsatellites have been used in recent years to estimate stock contributions in Canadian fisheries. Use of GSI is anticipated to increase in the future for estimating contributions to other Pacific Salmon Treaty fisheries, and several recently approved projects are actively working toward this.

A blind test mixture composed of results from matched samples collected in 2002 from sockeye salmon stocks known to be important contributors to NBA fisheries (including the Alaskan fishery at Tree Point), was used to compare accuracy of the two methods in this study. The stock composition of the blind test mixture was withheld from the scale pattern and the genetic analysts until their determinations were received.

GSI and SPA techniques displayed similar levels of accuracy in correctly estimating stock composition proportions of test mixtures, as well as in correctly classifying stock of origin for individual samples, although GSI generally performed better in this regard. For the short term, collection of scales for age and SPA should be continued until genetic baselines are adequately comprehensive, stable long term funding is sufficient to provide representative genetic sampling in mixed stock fisheries, and genetic sample processing capacity is adequate to handle the necessary sample sizes. In addition, paired sampling of genetic samples and scales in mixed stock fisheries should continue until comparative

performance between the two techniques is adequately known to evaluate historic stock identification results based on SPA against future results based on genetic variation.

U.S./CANADA NORTHERN BOUNDARY AREA 2005 SALMON FISHERIES MANAGEMENT REPORT AN D2006 PRELIMINARY EXPECTIONS TCNB (06)-1 – January 2006

This report reviews:

1) catch, effort, and management actions in the 2005 Northern Boundary Area troll and net fisheries of southern Southeast Alaska Districts 101 to 108 and northern British Columbia Areas 1, 3, 4, and 5;

2) management performance relative to Treaty requirements for pink salmon;

3) preliminary expectations and fishing plans for 2006.

Historical catch and effort data by district or area, gear, species, and week are no longer reported annually in this report. They can be referenced in *Pacific Salmon Commission, Northern Boundary Technical Committee Report, U.S. / Canada Northern Boundary Area 1999 Salmon Fisheries Management Report and 2000 Preliminary Expectations*. Report TCNB (01)-1, January 2001. If these historical numbers are modified, they will be added as an appendix in a future annual report.

2005 Fisheries

In southern Southeast Alaska the 2005 harvest of pink salmon was 28.9 million, which is 93% of the recent 10-year average of 31.1 million. The 2005 pink salmon harvest for all of Southeast Alaska and Yakutat was 59.1 million, which was above the preseason forecast of 49 million pink salmon, with a range of 25-72 million (80% C.I.). Formal forecasts are not made for sub-regions, or for species other than pink salmon in Southeast Alaska.

The pink salmon escapement index of 9.8 million pink salmon was slightly greater than the upper range of the biological escapement goal of 4.0 to 9.0 million for southern Southeast Alaska. Escapement indices for southern Southeast Alaska by District were all within or above management targets. Escapement indices for all but 1 of the 18 southern Southeast Alaska pink salmon stock groups were also within, or above, management targets.

In the North Coast of British Columbia, aggregate sockeye returns to the Skeena River were below escapement target and no commercial sockeye or pink directed fisheries took place in Area 4 this year. The Nass aggregate sockeye return was also below average. The commercial net catch of 199,831 sockeye in Area 3 was below the decadal average. The estimated net escapement of 226,022 was above the 200,000 target, although the Meziadin escapement of 142,858 was below both the decadal average (183,000) and escapement target (160,000).

An estimated 708,896 sockeye passed through the Babine fence and enhanced Babine stocks achieved target capacity in the Pinkut and Fulton spawning channels. Meanwhile, returns of non-enhanced Babine stocks were variable. Returns to the Morice and Kitwanga systems were below desired levels but showed improvement over the brood years, with estimated escapements of 9,000 and 937, respectively.

Pink returns were above average in Area 3 and in the Skeena. The total Areas 3 net pink catch was 2.15 million. Pink escapements were at or above target in Areas 3, 4 and 5. Low chum abundance in Areas 3 to 5 resulted in lower than target escapements to most streams. Management actions were in place to minimize chum mortality throughout the Areas 3 and 5 net fishing seasons. The Area 1 troll fishery harvested 39,467 pinks, with low catches attributed to low effort.

E. JOINT TRANSBOUNDARY TECHNICAL COMMITTEE

ESTIMATES OF TRANSBOUNDARY RIVER SALMON PRODUCTION, HARVEST AND ESCAPEMENT AND A REVIEW OF JOINT ENHANCEMENT ACTIVITIES IN 2003
TCTR (05)-1 – September, 2005

Estimates of catches and escapements of Pacific salmon returning to the transboundary Stikine, Taku, and Alsek Rivers for 2003 are presented and compared with historical patterns. Relevant information pertaining to the management of appropriate U.S. and Canadian fisheries is presented and the use of inseason management models is discussed. Results from transboundary river sockeye salmon *Oncorhynchus nerka* enhancement projects are also reviewed.

Stikine

The 2003 Stikine River sockeye salmon run is estimated at 241,000 fish, of which approximately 120,000 fish were harvested in various fisheries including test fisheries. An estimated 121,000 Stikine River fish escaped to spawn, including 7,000 fish that migrated to the Tuya River block and were not harvested. The run was above the 1993-2002 averages, while the harvest was average. The Tahltan Lake weir count of 54,000 sockeye salmon was above the upper bound of the goal range (18,000 to 30,000 fish), the highest since 1992, and twice the 1993-2002 average. The estimated U.S. commercial catch of Stikine River sockeye salmon in Districts 106 and 108 was 47,000 fish and the Canadian inriver commercial, aboriginal, and excess salmon to spawning requirement (ESSR) fishery catch was 65,000 sockeye salmon. The inriver test fishery harvested 3,000 sockeye salmon and there was no marine test fishery in 2003. The Stikine Management Model (SMM) predicted a run greater than the preseason forecast after week 27. Weekly inseason model forecasts ranged from 150,000 to 283,000 sockeye salmon; the final inseason model prediction was 272,000 fish (both U.S. and Canada), with a total allowable catch (TAC) of 209,000 fish. Based on the postseason run estimates and TAC calculations of 90,000 Stikine River fish for each country, Canada harvested 68% and the U.S. harvested 54% of their respective TACs. The broodstock collection and otolith sampling removed 4,000 and 400 sockeye salmon respectively from the escapement to Tahltan Lake leaving a spawning escapement of 50,000 fish. The estimate of 58,000 mainstem spawners is above the upper goal range of 40,000 spawners, is near the record of 72,000 spawners in 1993, and 73% above the 1993-2002 average. The total sockeye salmon escapement calculated from mark–recapture study was 143,000 sockeye salmon, 8% above of the estimate generated from the test fishery catch per unit effort (CPUE).

The harvest of Chinook salmon *O.tshawytscha* in Canadian commercial and aboriginal fisheries in the Stikine River was 1,400 large fish and 1,100 jacks, 60% and 203% of the 1993-2002 respective averages. An additional 1,300 large and 800 jack Chinook salmon

were taken in the Canadian inriver test fishery. The U.S. marine harvest of Chinook salmon (all stocks) in the District 106 and 108 mixed stock gillnet fisheries was 700 fish, 35% of the 1993-2002 average harvest. The Chinook salmon spawning escapement of 6,500 large adults through the Little Tahltan River weir in 2003 was above the recently revised joint U.S./Canada escapement goal range of 2,700 to 5,300 fish, but was close to the 1993-2002 average. The total Stikine River Chinook salmon escapement as estimated from a mark–recapture study is 40,200 fish.

As with Chinook salmon, the U.S. marine harvest of Stikine River coho salmon *O. kisutch* is unknown since there is no stock identification program for this species. Mixed stock coho salmon harvest in Districts 106 and 108 were 212,000 and 39,000 fish, respectively, and were 8% and 212% above the 1993-2002 respective averages. Alaskan hatchery fish comprised approximately 40% (101,000 fish) of the coho salmon harvest from the two districts. The Canadian inriver coho salmon catch of 190 fish was 15% of the 1993-2002 average. Based on the test fishing performance the estimated total inriver coho salmon run was 55,000 fish, well above the interim escapement goal range of 30,000 to 50,000 fish. Aerial surveys of coho salmon spawning index sites were not conducted in 2003 due to extremely high water and inclement flying conditions.

Taku River

The estimated 2003 Taku River sockeye salmon run is 338,000 fish, including an estimated catch of 170,000 fish and an above-border spawning escapement of 168,000 sockeye salmon. The run size was 37% above the 1993-2002 average of 247,000 fish and the escapement was roughly 2.2 times the escapement goal range of 71,000 to 80,000 fish. An estimated 136,000 Taku River sockeye salmon were harvested in the District 111 commercial fishery, 36% above the 1993-2002 average, and an estimated 1,100 sockeye salmon were harvested in the U.S. inriver personal use fishery. Canadian inriver commercial and aboriginal fishery harvest included 33,000 and 300 sockeye salmon, respectively. The commercial harvest was 7% above the 1993-2002 average harvest of 31,000 fish. Using the center of the escapement goal range of 75,000 fish Canada harvested an estimated 13%, and the U.S. took 52% of the TAC.

The harvest of large Chinook salmon in the Canadian commercial fishery in the Taku River was 2,000 fish, 9% above the 1993-2002 average; in addition, 600 jack Chinook salmon were caught compared to an average of 200 fish. The Canadian aboriginal fishery in the Taku River harvested 300 large Chinook salmon. District 111 mixed stock gillnet fishery harvest of 1,500 Chinook salmon was 47% of the 1993-2002 average. Approximately 22% of the harvest was estimated to be of Alaska hatchery origin. The above-border mark–recapture estimate for Chinook salmon is 40,000 fish, within the escapement goal range of 30,000 to 55,000 fish.

The estimated above border run of Taku River coho salmon in 2003 is 187,000 fish, which is 2.3 times the 1993-2002 average. The Canadian inriver commercial harvest included 3,200 coho salmon, 56% of the 1993-2002 average of 5,800 fish. After upriver Canadian harvest are subtracted from the inriver run, the above-border-spawning escapement is estimated at 183,000 coho salmon, which exceeds the minimum escapement goal of 38,000 fish. The U.S. harvest of 24,000 coho salmon in the District 111 mixed stock fishery was 48% of the 1993-2002 average. Alaskan hatcheries contributed an estimated 6% of the District 111 harvest, or 1,500 fish.

The harvest of 112,000 pink salmon *O. gorbuscha* in District 111 was 12% above the 1993-2002 average catch. Pink salmon were not retained in the Canadian commercial

inriver fishery in 2003. The escapement of pink salmon to the Taku River was likely above average as evidenced by the fish wheel catch and release of 15,500 pink salmon, 24% above the 1993-2002 average.

The catch of chum salmon *O. keta* in the District 111 fishery was 170,000 fish; composed of 169,000 summer run fish (prior to mid-August) and 1,000 fall run fish. The harvest of summer chum salmon, primarily Alaskan hatchery stocks, was 55% of the 1993-2002 average. The harvest of fall chum salmon, composed of wild Taku River and Port Snettisham stocks, was 20% of the 1993-2002 average. As with pink salmon, there was non-retention of chum salmon in the Canadian inriver fishery and the reported catch was 0 fish in 2003. Although spawning escapement is not known the Canyon Island fish wheel catch of 270 chum salmon was 89% of the 1993-2002 average.

Alsek River

The Alsek River sockeye salmon harvest of 40,000 fish in the U.S. commercial fishery was 2.2 times the 1993-2002 average harvest. The Canadian inriver harvest of 2,800 fish was twice the 1993-2002 average harvest. The Klukshu River weir count of 34,000 sockeye salmon was 2.6 times the 1993-2002 average and was above the goal-range of 7,500 to 15,000 fish. The count of 3,100 early run sockeye salmon (count through August 15) was close to the 1993-2002 average. The late run count of 31,000 fish was three times the average for the same period. The mark–recapture program indicated an Alsek River sockeye salmon run above Dry Bay of 90,000 fish with the Klukshu stocks representing 38% of the total Alsek River run.

The Chinook salmon run to the Alsek River seemed below average. The U.S. Dry Bay catch of 900 Chinook salmon was 55% above the 1993-2002 average of 600 fish. The combined Canadian sport and aboriginal fishery catch of 200 Chinook salmon was 41% of the 1993-2002 average. The 1,700 Chinook salmon counted through the Klukshu River weir was 61% of the 1993-2002 average. Of the total count, 1,660 Chinook salmon were estimated to have spawned, thus achieving the escapement goal range of 1,100 to 2,300 Chinook salmon. The mark-recapture estimate of the spawning escapement of large fish in the Alsek River is 4,300 fish compared to an average of 10,000 fish (1997-2002 years of operation of the project). An estimated 32% of these fish spawned in the Klukshu system.

Current stock assessment programs prevent an accurate comparison of the Alsek River coho salmon run with historical runs. The U.S. Dry Bay catch of 50 coho salmon was <1% of the 1993-2002 average, while the combined Canadian inriver aboriginal and sport fishery catch of 200 fish was 40% above the average. The operation of the Klukshu weir does not provide a complete enumeration of coho salmon into this system since it is removed before the run is over; however, it does provide an annual index. The count of 3,700 coho salmon was 26% above the 1993-2002 average

Enhancement

Eggs and milt were collected from the year 2003 sockeye salmon escapements at Tahltan and Tatsamenie Lakes. For the seventh year in a row the 6.0 million egg-take goal was not achieved at Tahltan Lake, despite an above average escapement. A total of 5.4 million eggs was collected at Tahltan Lake. At Tatsamenie Lake, 2.5 million eggs were collected for the hatchery. Approximately 200,000 eggs were collected for an in-lake incubation project..

Outplants of 2002 brood-year sockeye salmon fry in May and June 2003 included, 2.6 million fry into Tahltan Lake, 1.1 million fry into Tuya Lake, and 1.4 million fry into Tatsamenie Lake. Green-egg to planted-fry survivals were 94%, 89%, and 59% for the Tahltan, Tuya and Tatsamenie outplants, respectively. Survival to emergence was above average for Tahltan and Tuya lakes and below average for Tatsamenie Lake. Three brood year 2002 incubators from the Tatsamenie Lake were lost to IHNV and approximately 442,000 fry held in a net pen at the lake were also lost due to the IHN virus; these losses represent the largest IHNV loss since the Tatsamenie program began. Losses from IHN have occurred in the past at Snettisham Hatchery and are expected in sockeye salmon culture.

Outmigrant smolt sampling was conducted at Tahltan and Tatsamenie Lakes in 2003. Total emigration from Tahltan Lake was an estimated at 1,960,000 smolts with approximately 50% (981,000 outmigrants) from past fry plants. Sampling at Tuya Lake was not conducted in 2003. The Tatsamenie Lake smolt mark–recapture program estimated that 539,500 smolts (SE 22,507) emigrated from the lake. An estimated 457,600 of this total were age 1+ wild smolts and 72,100 were age 1+ planted smolts. Estimates of survival of the brood year 2001 fry plants indicate that smolt from the fed outplanted fry had a 1.7 fold increase over the wild fry whereas, smolt from the unfed outplanted fry had a 3.4 fold increase over the wild fry. The estimates of survival from fry to smolt were: early fed hatchery group, 1.9%; early unfed hatchery group, 3.8%; and 1.1% wild fish.

The egg incubation and thermal-marking program was continued at Snettisham Hatchery in 2003. Snettisham hatchery is operated by DIPAC (Douglas Island Pink and Chum, Inc.), a private aquaculture organization in Juneau. A co-operative agreement between ADF&G and DIPAC provides for Snettisham hatchery to serve the needs of the joint TBR enhancement projects.

Adult sockeye salmon otoliths were processed inseason by the ADF&G otolith lab to estimate the weekly contribution of fish from US/Canada TBR fry planting programs to the District 106, 108, and 111 gillnet fisheries and to Canadian commercial fisheries in the Stikine and Taku Rivers. The estimated contributions of planted fish to Alaskan harvest were 16,600 planted Stikine River fish to District 106 and 108, (10.4% of that catch) and 800 planted Taku River fish to District 111 (<1% of that harvest). Estimates of contributions to Canadian fisheries included 25,000 planted fish to Stikine River fisheries (38% of that catch) and 300 planted fish to the Taku River fisheries (<1% of that catch).

ESTIMATES OF TRANSBOUNDARY RIVER SALMON PRODUCTION, HARVES AND ESCAPEMENT AND A REVIEW OF JOINT ENHANCEMENT ACTIVITIES IN 1999.
TCTR (05)-2 – September, 2005

Estimates of catches and escapements of Pacific salmon returning to the transboundary Stikine, Taku, and Alsek Rivers for 1999 are presented and compared with historical patterns. Relevant information pertaining to the management of appropriate U.S. and Canadian fisheries is presented and the use of inseason management models is discussed. Results from transboundary river sockeye salmon *Oncorhynchus nerka* enhancement projects are also reviewed.

Stikine

The 1999 Stikine sockeye salmon run is estimated at 124,600 fish, of which an estimated 106,000 fish were harvested in various fisheries including test fisheries, 400 fish were taken at the Tahltan Lake weir for otolith samples, and 2,900 Tahltan fish were used for broodstock. An estimated 16,800 Stikine fish escaped to spawn and 2,300 fish returned to the Tuya system and were not harvested. The catch was below average and the run below the 1989-1998 average run size and the lowest since 1990. Spawning escapements were also below goals. The estimated U.S. commercial catch of Stikine sockeye salmon in Districts 106 and 108 was 54,800 fish and the Canadian inriver commercial, aboriginal, and ESSR fishery catches were 33,100, 4,900, and 2,300 fish, respectively. A U.S. test fishery in District 108 harvested 3,900 Stikine sockeye salmon and the Canadian inriver test fishery catch included 5,900 sockeye salmon. The postseason estimate was close to the preseason forecast of 126,000 fish. The Stikine Management Model predicted a run greater than the preseason forecast after week 30. Weekly inseason model forecasts ranged from 76,000 to 227,000 sockeye salmon; the final inseason model prediction was 206,000 fish (both U.S. and Canada), with a total allowable catch (TAC) of 130,300 fish. Based on the inseason model estimates, both Parties harvested below their 50% target of the TAC (65,000 Stikine sockeye salmon). However, postseason run estimate indicated that both countries exceeded their 50% portion of the TAC; Canada harvested 70% of the TAC and the U.S. harvested 101%. The broodstock collection and otolith sampling removed 2,900 and 400 sockeye salmon, respectively; from the escapement to Tahltan Lake leaving a spawning escapement of 7,400 fish, falling below the goal of 24,000 fish through Tahltan weir. The estimated spawning escapement of 6,100 mainstem Stikine sockeye salmon was also below the objective of 20,000 to 40,000 fish for this stock group.

The catch of Chinook salmon *O.tshawytscha* in Canadian commercial and aboriginal fisheries in the Stikine River was 2,900 large fish and 1,300 jacks, 29% and 164% of the respective 1989-1998 averages. An additional 900 large and 100 jack Chinook salmon were taken in the Canadian inriver test fishery. The U.S. marine catch of Chinook salmon (all stocks) in the District 106 and 108 mixed stock gillnet fisheries was 1,600 fish, below the 1989-1998 average catch. The U.S. District 108 test fishery harvested 30 Chinook salmon. The Chinook salmon spawning escapement of 4,700 large adults through the Little Tahltan River weir in 1999 was 84% of the 1989-1998 average.

As with Chinook salmon, the U.S. marine harvest of Stikine coho salmon *O. kisutch* is unknown since there is no stock identification program for this species. Mixed stock coho salmon catches in Districts 106 and 108 were 203,300 and 28,000 fish, respectively, and were 2% and 70% above the 1989-1998 averages, respectively. Alaskan hatchery fish comprised approximately 39% (89,200 fish) of the coho salmon harvest from the two districts. The Canadian inriver coho salmon catch of 200 fish was 7% of the 1989-1998 average.

Taku

The postseason estimate of the 1999 Taku sockeye salmon run is 183,800 fish, including an estimated catch of 85,700 fish and an above-border spawning escapement of 98,200 sockeye salmon. The run size and catches were about 75% of the 1989-1998 average while escapement was average and above the escapement goal range of 71,000 to 80,000 fish. An estimated 62,700 Taku sockeye salmon were harvested in the District 111 commercial fishery, 60% of the 1989-1998 average, and an estimated 1,300 sockeye salmon were harvested in the U.S. inriver personal use fishery. Canadian inriver

commercial and aboriginal fishery catches included 20,700 and 400 sockeye salmon, respectively. The commercial catch was 76% of the 1989-1998 average, whereas the aboriginal catch was 87% above average. Since the escapement goal is expressed as a range, the resulting total allowable catch is also expressed as a range. In 1999, Canada harvested an estimated 31% to 34%, and the U.S. took 48% to 52% of the total allowable catch.

The catch of large Chinook salmon in the Canadian commercial fishery in the Taku River was 900 fish, 53% of the 1989-1998 average; in addition, 260 jack Chinook salmon were caught compared to 1989-1998 averages of 1,700 and 200 fish, respectively. The Canadian aboriginal fishery in the Taku River harvested 50 large Chinook salmon. In the District 111 mixed stock gillnet fishery the catch of Chinook salmon was 1,800 fish, 55% of the 1989-1998 average. Approximately 27% of the catch, 500 fish, was estimated to be of Alaska hatchery origin. The escapement of 4,200 Chinook salmon counted in Taku River index areas was 36% of the 1989-1998 average and below the recently revised index escapement goal range of 5,800 to 10,500 fish.

The estimated above border run of Taku coho salmon in 1999 is 66,400 fish, which is 87% of the 1989-1998 average. The Canadian inriver commercial catch included 4,400 coho salmon, 80% of the 1988-1997 average. After upriver Canadian catches are subtracted from the inriver run, the above-border-spawning escapement is estimated at 61,000 coho salmon, which exceeds the minimum escapement goal of 38,000 fish. The U.S. harvest of 17,300 coho salmon in the District 111 mixed stock fishery was 21% of the 1989-1998 average. Alaskan hatcheries contributed an estimated 8% of the District 111 harvest, or 1,300 fish.

The harvest of 59,300 pink salmon *O. gorbuscha* in District 111 was 42% of the 1989-1998 average catch of 141,500 fish. Pink salmon were not retained in the Canadian commercial inriver fishery in 1999. The escapement of pink salmon to the Taku River was likely above average as evidenced by the fish wheel catch and release of 23,500 pink salmon, 49% above the 1989-1998 average.

The catch of chum salmon *O. keta* in the District 111 fishery was 429,400 fish; composed of 424,600 summer run fish (prior to mid-August) and 4,800 fall run fish. The catch of summer chum salmon, primarily Alaskan hatchery stocks, was 227% above the 1989-1998 average and was the highest on record. The catch of fall chum salmon, composed of wild Taku River and Port Snettisham stocks, was 36% of the 1989-1998 average. As with pink salmon, there was non-retention of chum salmon in the Canadian inriver fishery and the reported catch was 0 fish in 1999. Spawning escapement appeared to be poor; the Canyon Island fish wheel catch of 160 chum salmon was 35% of the 1989-1998 average and the second lowest on records dating back to 1984.

Alsek

The Alsek River sockeye salmon harvest of 11,400 fish in the U.S. commercial fishery was 58% of the 1989-1998 average. The Canadian inriver catch of 550 sockeye salmon was the second lowest on record, following 1997 and was 28% of the 1989-1998 average. The aboriginal fishery harvested 550 sockeye salmon, 33% of the 1989-1998 average. No fish were harvested in the sport fishery. The low catches were the result of extensive closures in the sport and aboriginal fisheries due to conservation concerns. The Klukshu River weir count of 5,400 sockeye salmon was 31% of the 1989-1998 average and the lowest on record. The count of 400 early-run sockeye salmon (count through August 15)

was 10% of the 1989-1998 average, whereas the count of 5,000 late run fish was 37% of average for the same period.

The Chinook salmon run to the Alsek River seemed average to below average. The U.S. Dry Bay catch of 500 Chinook salmon was 17% above the 1989-1998 average. The combined Canadian sport and aboriginal fishery catch of 430 Chinook salmon was 63% of the 1989-1998 average. The 2,200 Chinook salmon counted through the Klukshu River weir was 76% of the 1989-1998 average. Of the total count, 2,200 Chinook salmon were estimated to have spawned, thus achieving the escapement goal range 0f 1,100 to 2,300 Chinook salmon, established by the TTC for 1999. Aerial survey index counts of other spawning systems were average.

Current stock assessment programs are insufficient to provide accurate comparison of Alsek coho salmon runs with historical runs. The U.S. Dry Bay catch of 5,700 coho salmon was 98% of the 1989-1998 average, while the combined Canadian inriver aboriginal and sport fishery catch of 30 fish was 17% of the 1989-1998 average. The low catch was due to closures in the fisheries due to sockeye salmon conservation concerns. The operation of the Klukshu weir does not provide a complete enumeration of coho salmon into this system since it is removed before the run is over; however, it does provide a suitable annual index. The count of 2,600 coho salmon was 5% above the 1989-1998 average.

Enhancement

Eggs and milt were collected from the 1999 sockeye salmon escapements at Tahltan and Tatsamenie lakes. A total of 4,200,000 eggs were collected at Tahltan Lake, 70% of the 6,000,000 egg-take goal; the goal was not attained due to low escapement to the lake in 1999. At Tatsamenie Lake, approximately 500,000 eggs were taken which was 10% of the 5,000,000 egg target specified in the treaty. Additional eggs were not taken due to a shortfall in escapement.

Fry outplanted in June 1999 included 1,700,000 fry into Tahltan Lake, 1,600,000 fry of Tahltan Lake origin into Tuya Lake, and 1,800,000 fry into Tatsamenie Lake; green-egg to planted fry survivals were 84%, 79%, and 73%, respectively. Survival to emergence was generally at, or below, expected levels; there were no losses to Infectious Hematopoietic Necrosis (IHN).

Outmigrant smolt sampling was conducted at Tahltan, Tuya, and Tatsamenie Lakes in 1999. Total emigration from Tahltan Lake was an estimated 762,000 smolts, less than the number expected. An estimated 294,000 smolts originated from the fry-planting program. Sampling at Tuya Lake was conducted to estimate age and size composition of the outmigrants but outmigration magnitude was not estimated. Sample size was limited due to logistics and timing. The Tatsamenie Lake mark-recapture program estimated that 776,000 smolts out-migrated from that system with planted fish contributing about 92,000 smolts.

The egg incubation and thermal-marking program was continued at Snettisham Hatchery in 1999. Snettisham hatchery is operated by DIPAC (Douglas Island Pink and Chum, Inc.), a private aquaculture organization in Juneau. A co-operative agreement between ADF&G and DIPAC provides for Snettisham hatchery to serve the needs of the joint TBR enhancement projects.

Adult sockeye salmon otoliths were processed inseason by the ADF&G otolith lab to estimate the weekly contribution of fish from U.S./Canada fry planting programs to the District 106, 108, and 111 gillnet fisheries and to Canadian commercial fisheries in the Stikine and Taku Rivers. Preliminary contribution estimates of planted fish to Alaskan catches were 15,000 Stikine sockeye salmon to District 106 and 108 (11% of catch) and 600 Taku sockeye salmon to District 111 (< 1.0% of catch). Estimates of contributions to Canadian fisheries included 8,800 sockeye salmon (23% of catch) to Stikine River fisheries and 290 sockeye salmon to the Taku River fisheries (1.4% of catch).

ESTIMATES OF TRANSBOUDNARY RIVER SALMON PRODUCTION, HARVEST AND ESCAPEMENT AND A REVIEW OF JOINT ENHANCEMENT ACTIVITIES IN 1996.
TCTR (05)-3 – November, 2005

Estimates of catches and escapements of Pacific salmon returning to the transboundary Stikine, Taku, and Alsek rivers for 1996 are presented and compared with historical patterns. Relevant information pertaining to the management of appropriate U.S. and Canadian fisheries is presented and the use of inseason management models is discussed. Results from transboundary river sockeye salmon *Oncorhynchus nerka* enhancement projects are also reviewed.

Stikine
The 1996 Stikine sockeye salmon run is estimated at 372,300 fish, of which 264,000 fish were harvested in various fisheries, 4,400 were used for broodstock, and 108,300 escaped to spawn. The catch was the highest recorded since 1982 when stock identification techniques were first used for marine catches. The run was the highest since 1979 and was above the 1986-1995 average of 141,400 sockeye salmon. The estimated U.S. commercial catch of Stikine sockeye salmon in Districts 106 and 108 was 188,400 fish; the Canadian inriver commercial, aboriginal, Excess Salmon to Spawning Requirement (ESSR), and test fishery catches were 67,400, 6,900, 13,200 and 1,300 fish, respectively. Sockeye salmon from outplants into Tahltan and Tuya lakes contributed an estimated 36,000 fish to U.S catches and 15,400 fish to Canadian catches. The postseason estimate of 372,300 sockeye salmon was slightly above the preseason forecasts by Canada (329,000) and the U.S. (341,000). The Stikine Management Model correctly predicted a larger than average sockeye salmon run. Weekly inseason model forecasts ranged from 220,500 to 493,000 sockeye salmon; the final inseason model predictions were 336,700 (Canada) and 360,500 (U.S.). Canadian and U.S. final inseason estimates were different primarily due to differences in commercial catch data input. Using the inseason estimates, both countries were harvesting below their TAC, with the exception of the U.S. final model run in statistical week 32. Using the postseason estimate of run size and total allowable catch, Canada harvested 24% of the total allowable catch and the U.S. harvested 60% of the total allowable catch. The broodstock take removed 4,400 sockeye salmon, and terminal surplus escapement fishery removed 13,200 sockeye salmon from the escapement to Tahltan Lake leaving a spawning escapement of 52,500 fish, 219% above the goal of 24,000 fish. The estimated spawning escapement of 45,200 Mainstem Stikine sockeye salmon was above the upper end of the escapement goal range (20,000 to 40,000 fish) for this stock group.

The catch of Chinook salmon *O.tshawytscha* in Canadian commercial and aboriginal fisheries in the Stikine River was 2,500 large fish and 420 jacks, 24% above and 24% below the respective 1986-1995 averages. An additional 50 Chinook salmon were taken

in the Canadian inriver test fishery. The U.S. marine catch of Chinook salmon in the District 106 and 108 mixed stock gillnet fisheries was 2,400 fish, approximately 5% above the 1986-1995 average catch. The Chinook salmon spawning escapement of 4,800 large adults through the Little Tahltan River weir in 1996 was 10% below the 1986-1995 average and 4% below the joint U.S./Canada escapement goal of 5,300 fish. Surveys of other Stikine tributaries also showed below average escapements.

The U.S. marine harvest of Stikine River coho salmon *O. kisutch* is unknown since there is no stock identification program for this species; however, total mixed-stock coho salmon catches of 223,600 and 19,100 fish in Districts 106 and 108, respectively, were 34% and 40% above the 1986-1995 averages. Alaskan hatchery fish comprised approximately 23% (55,900 fish) of the coho salmon harvest from the two districts. The Canadian inriver coho salmon catch of 1,400 fish was 41% of the previous 10-year average. The estimated coho salmon escapement of 59,600 fish is above the interim escapement goal range of 30,000 to 50,000 coho salmon. Aerial surveys of six coho salmon spawning index sites also indicated above average spawning escapement.

Taku

The 1996 Taku sockeye salmon run estimate was 324,800 fish, a record, and included an estimated catch of 232,200 fish and an above-border spawning escapement of 92,600 fish. The run size and catch were all time highs, and escapement, while below the 1986-1995 average, exceeded the upper level of the escapement goal range of 71,000 to 80,000 fish. An estimated 187,400 Taku sockeye salmon were taken in the District 111 commercial fishery and 3,000 sockeye salmon in the U.S. inriver personal use fisheries. Canadian inriver commercial and aboriginal fishery catches were 41,000 and 400 sockeye salmon, respectively. Since the escapement goal is expressed as a range, the resulting total allowable catch is also expressed as a range. In 1996, Canada harvested an estimated 17% to 17.2%, and the U.S. took 75% to 78% of the total allowable catch.

The catch of large Chinook salmon in the Canadian commercial fishery in the Taku River was 3,300 fish, over 3 times the 1986 to 1995 average; in addition, 140 jack Chinook salmon were caught compared to an average of 190 fish. The District 111 mixed stock gillnet fishery harvested 2,700 Chinook salmon, 21% below the 1986-1995 average. Twenty percent of the catch was estimated to be of Alaska hatchery origin. Escapement observed in six Taku River Chinook salmon index tributaries was the highest recorded. The combined aerial count for the index tributaries was 19,800 fish, which was two times the 1986-1995 average of 9,700 fish, and 1.5 times the index escapement goal of 13,200 fish.

The Taku coho salmon run was below the 1986 to 1995 average in 1996. The U.S. harvest of 33,600 coho salmon in the District 111 mixed stock fishery was 39% of the previous 10-year average and the lowest catch since 1986. Alaskan hatcheries contributed an estimated 23% of the District 111 harvest, or 7,600 fish. The Canadian inriver commercial and food fishery catch was 24 coho salmon, 27% of the previous 10-year average. The above-border inriver run size is estimated at 49,700 coho salmon. After upriver Canadian catches are subtracted from the inriver run, the above-border spawning escapement is estimated at 44,600 coho salmon, which exceeds the interim escapement goal range of 27,500 to 35,000 fish.

The catch of pink salmon *O. gorbuscha* in District 111 was 12,700 fish, 7% of the 1986-1995 average catch. There was no reported harvest of pink salmon in the Canadian commercial inriver fishery. The escapement of pink salmon to the Taku River was good as evidenced by the fish wheel catch of 21,600 pink salmon, 33% above the ten-year average.

The catch of chum salmon *O. keta* in the District 111 fishery was 354,100 fish, composed of 347,600 summer run fish (prior to mid-August) and 6,500 fall run fish. The catch of summer chum salmon, primarily Alaskan hatchery stocks, was a new record, slightly above the 1995 record catch. The catch of fall chum salmon, composed of wild Taku River and Port Snettisham stocks, was 76% below the 1986-1995 average. There was no reported harvest of chum salmon in the Canadian inriver fishery. Escapement appeared to be poor; the Canyon Island fish wheel catch of 400 chum salmon was 62% below average.

Alsek

The Alsek River sockeye salmon harvest of 15,000 fish was about 17% below the 1986-1995 average of 18,000. Canadian catches of 1,200 sockeye salmon in the aboriginal fishery and 200 in the sport fishery were 38% and 60% below average, respectively. The escapement to the Klukshu River weir of 8,300 fish was 45% below the 1986-1995 average. The Klukshu weir counts of 1,500 early-run (count through August 15) and 6,800 late-run sockeye salmon were both 45% below the 1986-1995 averages.

The Chinook salmon run to the Alsek River seemed above average. The U.S. Dry Bay catch of 800 fish was more than double the 1986-1995 average. The combined Canadian sport and aboriginal fishery catch of 1,100 fish was 86% above the 1986-1995 average. The 3,600 Chinook salmon count through the Klukshu River weir was 27% above the 1986-1995 average of 2,800 fish. The Klukshu River escapement goal is 4,700 Chinook salmon. Aerial survey index counts of other spawning systems were below average.

The coho salmon run to the Alsek River was above average, but current stock assessment programs prevent an accurate comparison with historical runs. The U.S. Dry Bay catch of 5,500 coho salmon was 23% above the 1986-1995 average, while the combined Canadian inriver aboriginal and sport fishery catch of 65 fish was 62% below the 1986-1995 average; the coho salmon fishery was restricted due to efforts to protect the low return of sockeye salmon. Operation of the Klukshu weir does not provide a complete enumeration of coho salmon into this system since it is removed before the run is over; however, the count of 3,500 coho salmon was the third highest count on record.

Enhancement

Eggs and milt were collected from the 1996 sockeye salmon escapements to Tahltan and Tatsamenie lakes. A total of 6.2 million eggs was collected at Tahltan Lake, slightly above the 6.0 million egg-take goal. The Tatsamenie Lake egg-take goal was increased to 5.0 million from the old goal of 2.5 million; the new goal was realized in 1996 with the collection of 5.0 million eggs.

Outplants of 1995 broodyear sockeye salmon fry in June and July 1996 included 2,300,000 fry in Tahltan Lake, 2,500,000 fry of Tahltan Lake origin in Tuya Lake, and 1,700,000 fry in Tatsamenie Lake. Green-egg to planted-fry survivals were 76%, 64%, and 72% for these outplants, respectively. Survival to emergence was below average

partially due to the loss of 852,000 fry due to Infectious Hematopoietic Necrosis (IHN). Losses from IHN have occurred in the past at Snettisham Hatchery and are expected in sockeye salmon culture; Snettisham Hatchery has a good history of minimal losses to IHN.

Sampling of outmigrating smolts was conducted at lake systems that had been stocked with sockeye salmon fry. Large numbers of sockeye salmon smolts were captured at all lakes except Trapper Lake. Total emigration was estimated for Tahltan Lake and Tatsamenie Lakes in 1996. An estimated 1,559,000 smolts emigrated from Tahltan Lake; an estimate of the number from fry plants is not yet available. At Tatsamenie Lake a smolt recapture program was tested and provided an estimate of 469,000 emigrant smolts; this project was only funded for one year and while successful, may not be continued. As in past years, smolts outmigrating from Tuya Lake this spring were large in size. Outmigrating smolts were captured from Trapper Lake in 1996 as in previous years; age analysis is not complete, however, there appeared to be a higher proportion of age-1 smolts.

The State of Alaska transferred the operation of Snettisham from Alaska Department of Fish and Game (ADF&G) to Douglas Island Pink and Chum, Inc. (DIPAC), a private aquaculture organization with two other operational hatcheries in Juneau. A cooperative agreement between ADF&G and DIPAC provides for Snettisham to continue to serve the needs of the joint transboundary river enhancement projects. The transfer took effect on July 1, 1996; the new managers are doing an excellent job of hatchery operation. The egg incubation and thermal marking program at Snettisham Hatchery went smoothly in 1996.

Adult sockeye salmon otoliths were processed inseason by the Alaska Department of Fish and Game otolith lab to estimate the weekly contribution of enhanced sockeye salmon returns to the District 106, 108, and 111 gillnet fisheries. Canadian Department of Fisheries and Oceans' otolith lab will be processing all 1996 transboundary adult, juvenile, and smolt otolith samples.

ESTIMATES OF TRANSBOUNDARY RIVER SALMON PRODUCTION, HARVES AND ESCAPEMENT AND A REVIEW OF JOINT ENHANCEMENT ACTIVITIES IN 1997.

TCTR (05)-4 – December, 2005

Estimates of catches and escapements of Pacific salmon returning to the transboundary Stikine, Taku, and Alsek rivers for 1997 are presented and compared with historical patterns. Relevant information pertaining to the management of appropriate U.S. and Canadian fisheries is presented and the use of inseason management models is discussed. Results from transboundary river sockeye salmon *Oncorhynchus nerka* enhancement projects are also reviewed.

Stikine

The 1997 Stikine sockeye salmon run is estimated at 219,804 fish, of which an estimated 167,578 fish were harvested in various fisheries, 2,294 fish were used for broodstock, 52,226 fish escaped to spawn, and 8,091 fish returned to the Tuya system and were not taken in any fisheries. The catch was the second highest recorded since 1982 when stock identification techniques were first used for marine catches. The run was the third

highest since 1979 and was above the 1987-1996 average of 171,280 sockeye salmon. The estimated U.S. commercial catch of Stikine sockeye salmon in Districts 106 and 108 was 101,773 fish; the Canadian inriver commercial, aboriginal, and excess salmon to spawning requirement (ESSR) fishery catches were 59,194, 6,365, and 2,199, respectively. The inriver test fishery catch included 245 sockeye salmon and sampling for otoliths at the Tahltan weir took 378 sockeye salmon. Sockeye salmon from outplants into Tahltan and Tuya lakes contributed an estimated 50,487 and 25,721 fish to the U.S. and Canadian catches, respectively. The postseason estimate of 244,193 sockeye salmon was slightly above the preseason forecasts of 210,896 fish. The Stikine Management Model (SMM) correctly predicted a larger than average sockeye salmon run. Weekly inseason model forecasts ranged from 223,300 to 248,400 sockeye salmon; the final inseason model predictions were 234,100 (Canada) and 232,000 (U.S.). Canadian and U.S. final inseason estimates of run size were different primarily due to differences in updates to the commercial catch data input. Differences in estimated total allowable catch (TAC) were due to Canada using a total escapement goal of 78,000 (24,000 for Tuya stock) and the US using 54,000 (none for the enhanced Tuya stock). Using the inseason model estimates, Canada harvested below its TAC, whereas, the U.S. exceeded its TAC by approximately 23%. Using the postseason estimate of run size and a total allowable catch which allows for the same rate of escapement for Tuya fish as Tahltan fish (an escapement of 17,840 enhanced Tuya stock to allow for sufficient Tahltan escapement assuming the same harvest rate on both stocks), Canada harvested 44% (45% including ESSR catch) of the total allowable catch and the U.S. harvested 69% of the total allowable catch. The broodstock take and otolith sampling removed 2,294 and 378 sockeye salmon, respectively, from the escapement to Tahltan Lake leaving a spawning escapement of 9,811 fish, 59% below the goal of 24,000 fish. The estimated spawning escapement of 31,653 Mainstem Stikine sockeye salmon was within the escapement goal range (20,000 to 40,000 fish) for this stock group.

The catch of chinook salmon *O.tshawytscha* in Canadian commercial and aboriginal fisheries in the Stikine River was 4,483 large fish and 286 jacks, 118% above and 43% below the respective previous 10-year (1987-1996) averages. An additional 30 chinook salmon were taken in the Canadian inriver test fishery. The U.S. marine catch of chinook salmon in the District 106 and 108 mixed stock gillnet fisheries was 3,641 fish, approximately 58% above the 1987-1996 average catch. The chinook salmon spawning escapement of 5,557 large adults through the Little Tahltan River weir in 1997 was 5% above the joint U.S./Canada escapement goal of 5,300 fish but 4% below the 1987-1996 average. Surveys of other Stikine tributaries showed below average escapements.

The U.S. marine harvest of Stikine River coho salmon *O. kisutch* is unknown since there is no stock identification program for this species. Coho salmon catches of 77,550 and 2,140 fish in Districts 106 and 108, respectively, were 54% and 85% below the 1987-1996 averages. Alaskan hatchery fish comprised approximately 25% (19,683 fish) of the coho salmon harvest from the two districts. The Canadian inriver coho salmon catch of 401 fish was 88% below the previous 10-year average. Test fishery catches of coho salmon were too low to allow estimation of the total coho salmon run or of the total spawning escapement. Aerial surveys of six coho salmon spawning index sites indicated below average spawning escapement

Taku

The postseason estimate of the 1997 Taku sockeye salmon run is 175,866 fish, including an estimated catch of 104,780 fish and an above-border spawning escapement of 71,086

fish. The run size and catch were 37% and 33% below the 1987-1996 averages, and the escapement was 35% below average but within the escapement goal range of 71,000 to 80,000 fish. An estimated 78,288 Taku sockeye salmon was taken in the District 111 commercial fishery and 2,140 sockeye salmon in the U.S. inriver personal use fisheries. Canadian inriver commercial and aboriginal fishery catches were 24,003 and 349 sockeye salmon, respectively. Since the escapement goal is expressed as a range, the resulting total allowable catch is also expressed as a range. In 1997, Canada harvested an estimated 24% to 27%, and the U.S. took 71% to 78% of the total allowable catch.

The catch of large chinook salmon in the Canadian commercial fishery in the Taku River was 2,731 fish, 94% above the 1987-1996 average; in addition, 84 jack chinook salmon were caught compared to an average of 199 fish. The Canadian aboriginal fishery in the Taku River harvested 103 large chinook salmon. The chinook salmon catch in the District 111 mixed stock gillnet fishery was 2,804 fish, 17% below the 1987-1996 average. Seventeen percent of the catch was estimated to be of Alaska hatchery origin. Escapement observed in six Taku River chinook salmon index tributaries was the second highest recorded. The combined aerial count for the index tributaries was 13,849 fish, which was 27% above the previous 10-year average of 10,896 fish, and 5% above the index escapement goal of 13,200 fish.

The estimated above border run size of Taku River coho salmon run in 1997 was 49% below the 1987-1996 average. The above-border inriver run size is estimated at 35,035 coho salmon. The Canadian inriver commercial and aboriginal fishery catches totaled 2,690 coho salmon, 50% below the previous 10-year average. After Canadian catches are subtracted from the above-border run, the above-border spawning escapement is estimated at 32,345 coho salmon, which slightly exceeds the interim escapement goal range of 27,500 to 35,000 fish. The U.S. harvest of 3,515 coho salmon in the District 111 mixed stock fishery was 4% of the previous 10-year average and was the lowest catch since 1975. Alaskan hatcheries contributed an estimated 16% of the District 111 harvest, or 550 fish.

The catch of pink salmon *O. gorbuscha* in District 111 was 51,424 fish, 30% of the 1987-1996 average catch. There was no reported harvest of pink salmon in the Canadian commercial inriver fishery. The escapement of pink salmon to the Taku River was poor as evidenced by the fish wheel catch of 4,962 pink salmon, 28% of the previous 10-year average.

The catch of chum salmon *O. keta* in the District 111 fishery was 176,864 fish; composed of 173,804 summer run fish (prior to mid-August) and 3,060 fall run fish. The catch of summer chum salmon, primarily Alaskan hatchery stocks, was 12% above the previous 10-year average. The catch of fall chum salmon, composed of wild Taku River and Port Snettisham stocks, was 12% of the previous 10-year average. The harvest of chum salmon in the Canadian inriver fishery totaled 1 fish. Spawning escapement appeared to be poor; the Canyon Island fish wheel catch of 485 chum salmon was 26% below average.

Alsek

The Alsek River sockeye salmon harvest of 26,672 fish was about 54% above the 1987-1996 average of 17,278 fish. Canadian catches of 484 sockeye salmon in the aboriginal fishery and 36 in the sport fishery were the lowest on record, 74% and 90% below average, respectively. The low catch was the result of closures in the sport and aboriginal

fisheries due to conservation concerns. The escapement to the Klukshu River weir of 11,496 fish was 32% below the 1987-1996 average. The Klukshu weir count of 6,565 early run (count through August 15) was 94% above the previous 10-year average, whereas the count of 4,931 late-run sockeye salmon was the lowest on record and was 63% below average. Normally the late run dominates, averaging 13,468 through the Klukshu weir compared to the early run average of 3,424 fish. Counts in other index areas (Tanis Creek, Basin Creek and Village Creek) were below average.

The chinook salmon run to the Alsek River seemed about average. The U.S. Dry Bay catch of 568 chinook salmon was about 48% above the 1987-1996 average of 383 fish. The combined Canadian sport and aboriginal fishery catch of 530 fish was 22% below the previous 10-year average. The 2,989 chinook salmon count through the Klukshu River weir was 2% above the previous 10-year average of 2,919 fish. Aerial survey index counts of other spawning systems were below average. The standing goal for the Klukshu River chinook salmon escapement is 4,700 fish; the proposed revised goal, still under review, is 1,100 to 2,300 fish. Aerial survey index counts of other spawning systems were below average.

The coho salmon run to the Alsek River was above average, but current stock assessment programs prevent an accurate comparison with historical runs. The U.S. Dry Bay catch of 11,427 coho salmon was 233% above the 1987-1996 average of 4,909 fish, while the combined Canadian inriver aboriginal and sport fishery catch of 5 fish was the lowest on record and was 97% below the previous 10-year average. The low catch was due to closures in the fisheries due to sockeye salmon conservation concerns. The operation of the Klukshu weir does not provide a complete enumeration of coho salmon into this system since it is removed before the run is over; however, it does provide a suitable annual index. The count of 307 coho salmon was the lowest count since 1987 and was 87% below the previous 10-year average of 2,429 fish.

Enhancement

Eggs and milt were collected from the 1997 sockeye salmon escapements at Tahltan and Tatsamenie lakes. A total of 3.2 million eggs was collected at Tahltan Lake, 47% below the 6.0 million egg-take goal; the goal was not attained due to poor escapement to the lake in 1997. The Tatsamenie Lake egg-take goal was increased to 5.0 million in 1996 from the old goal of 2.5 million; the new goal was realized in 1997 with the collection of 5.0 million eggs.

Outplants of 1996 brood year sockeye salmon fry in June and July, 1997 included 2,248,000 fry into Tahltan Lake, 2,611,000 fry of Tahltan Lake origin into Tuya Lake, and 3,941,000 fry into Tatsamenie Lake. Green-egg to planted-fry survivals were 71%, 81%, and 80% for these outplants, respectively. Survival to emergence was generally at expected levels even though there was a loss of approximately 682,000 fry due to Infectious Hematopoietic Necrosis (IHN). Losses from IHN have occurred in the past at Snettisham Hatchery and are expected in sockeye salmon culture; Snettisham Hatchery has a good history of minimizing losses due to IHN.

Sampling of outmigrating smolts was conducted at lake systems that had been stocked with sockeye salmon fry. Large numbers of sockeye salmon smolts were captured at all lakes except Trapper Lake. Total emigration from Tahltan Lake in 1997 was an estimated 518,000 smolts; of which 170,000 originated from fry plants. As in past years, smolts outmigrating from Tuya Lake in the spring were large in size. At Tatsamenie

Lake, the smolt mark-recapture program tested in 1996 was not conducted in 1997 due to budgetary constraints. No outmigrating smolts were captured from Trapper Lake in 1997 although the sampling effort was limited; fry plants in Trapper Lake were suspended in 1996 and only age 2+ smolts would have been left in this system.

The State of Alaska transferred the operation of the Snettisham Hatchery on July 1, 1996 from the Alaska Department of Fish and Game (ADF&G) to Douglas Island Pink and Chum, Inc. (DIPAC), a private aquaculture organization with two other operational hatcheries in Juneau. A co-operative agreement between ADF&G and DIPAC provides for Snettisham to continue to serve the needs of the joint transboundary river enhancement projects. The egg incubation and thermal marking program at Snettisham Hatchery went smoothly in 1997.

Adult sockeye salmon otoliths were processed inseason by the ADF&G otolith lab to estimate the weekly contribution of sockeye salmon originating from fry plants to the District 106, 108, and 111 gillnet fisheries. Contributions of hatchery sockeye salmon to Alaskan catches were as follows: 16,700 Stikine sockeye salmon to District 106; 33,800 Stikine sockeye salmon to District 108; and, 2,000 Taku sockeye salmon to District 111. Estimates of contributions to Canadian fisheries included: 24,200 Stikine sockeye salmon to Stikine River fisheries; and 700 Taku sockeye salmon to the Taku River fisheries.

F. JOINT TECHNICAL COMMITTEE ON DATA SHARING

No reports were finalized for publication during this reporting period.

G. JOINT SELECTIVE FISHERY EVALUATION COMMITTEE

REVIEW OF 2005 MASS MARKING AND MARK SELECTIVE FISHERY PROPOSALS.
SFEC (05)-1 – September, 2005

The coast wide CWT system is the only means currently available to obtain data necessary to estimate and monitor coast wide exploitation rates on individual stocks of coho and Chinook salmon required for implementation of fishing regimes established by the Pacific Salmon Commission (PSC). The PSC established the Selective Fishery Evaluation Committee (SFEC) to assess impacts of mass marking (MM) and mark-selective fishing (MSF) on the viability of the CWT system. (Note that throughout this report, a marked fish refers to an adipose fin clipped fish and a double index tag (DIT) group includes two tag groups, one marked (adipose fin clipped) and one unmarked.)

This report (a) summarizes the results of the SFEC's review process of 2005 proposals for MM and MSF provided to the PSC between October and December 2004, (b) clarifies the oversight function of the SFEC, and (c) presents recommendations for addressing several unresolved issues and concerns.

Review of Mass Marking Proposals

Marking Programs
Twenty-three mass marking proposals were received for mass marking activities in 2005. Approximately 37 million coho are proposed to be marked coast wide, a decrease of 7%

from marking levels in 2004 due to reduced production. Approximately 64 million Chinook are proposed to be marked from southern U.S. hatcheries, an increase of 21.5 million (48%) from 2004. Most of the increase is for new marking of fall Chinook from the Washington Coast and the Columbia River - a result of implementing the new federal legislation that requires mass marking of all fish from federally funded facilities.

Sampling Programs

The proposed 2005 mass marking of southern U.S. Chinook stocks will potentially result in untagged marked encounters of 6,735 untagged Chinook in Alaskan and 18,584 in Canadian sampling programs (assuming a 25% sample rate). Because agencies in these areas rely upon visual sampling methods to recover CWTs, processing these unmarked fish will increase sampling costs and could possibly reduce CWT recovery rates.

The political climate surrounding MM is confused by conflicting policy positions. On the one hand, Alaskan Congressional representatives have requested that a moratorium be placed on MM of far-north migrating Chinook stocks. On the other hand, U.S. appropriations bills require MM at federal facilities. MM can be expected to increase CWT recovery and fishery sampling costs in Alaska and Canada; these agencies continued to rely upon visual sampling methods to recover CWTs, reducing the ability of southern U.S. agencies to obtain data from DIT release groups to estimate impacts of MSFs. MM, DIT, and CWT sampling programs are no longer synchronized between agencies. The differences in sampling and tagging methodologies have and will continue to impact analysis by PSC technical committees and other evaluation programs until resolved.

Review of Mark Selective Fishery (MSF) Proposals

Proposals to conduct four coho salmon MSFs were received for 2005, all of which have occurred since 2003. Six proposals were received for Chinook salmon MSFs for 2005, down from nine proposals received for 2004 MSFs. The six proposals include a new chinook proposal for a recreational fishery in Puget Sound from October 2005 to April 2006.

All coho salmon DIT stocks will be impacted in the proposed Washington Coast, Puget Sound and Southern B.C. MSFs. These fisheries have been in place for several years. A limited analysis of CWT data for stocks with DIT groups for Washington coho salmon (Puget Sound and coastal) for brood years 1995-1998 has been carried out and will be extended to include DIT groups from Canada and the Columbia River and more brood years. Chinook salmon DIT groups have been released from hatcheries in all U.S. regions except the Washington Coast. With the exception of Puget Sound, however, there are few groups for each region. Concern exists that all natural stocks impacted by these proposed MSFs may not be represented by a tagged group (i.e., unmarked DIT group). In 2005, Southern B.C. and Puget Sound Chinook stocks will potentially be impacted by two MSFs, a limited recreational fishery in the Strait of Juan de Fuca (Area 5/6), which will be in its third year (Table 6) and a new winter MSF in Puget Sound. With fisheries exploiting Chinook stocks over multiple ages and throughout several months, unbiased estimation of the unmarked to marked DIT ratio is unlikely, making estimation of unmarked mortalities problematic.

SFEC Coordination and Oversight Functions

The Double Index Tag (DIT) System

The DIT program was implemented, beginning with brood year 1995 for coho salmon and 1998 for Chinook salmon, to provide indicator tag groups (unmarked) for representation of unmarked natural production when MM and MSF are in place. The adequacy of stock coverage by DIT groups should be reviewed by the agencies, SFEC-Analytical Work Group (SFEC-AWG), Chinook Technical Committee (CTC), and Coho Technical Committee (CoTC). The SFEC should evaluate whether DIT groups can be expected to provide useful information on MSF impacts on Chinook salmon, and if not, what the alternatives may be. The SFEC-AWG proposes to address this and other questions in a technical report to be made available in winter 2005.

Clearinghouse.
The SFEC clearinghouse and oversight functions should allow affected agencies to evaluate the potential implications of MM or MSFs on sampling and tagging programs. For this purpose, the SFEC plans to request that management agencies provide two reports on MSFs. A preliminary report on the actual conduct of their mark-selective fisheries including regulations, timing, effort, mark rate and catch estimates, should be provided in November of the fishery year. A second report should be made available once the data are finalized and analyses of DIT data for MSF impacts are available.

Data Management for Unmarked DIT Mortalities
A joint meeting of the SFEC oversight committee and technical committee chairs was held during the PSC January meeting (1/12/05) to address the question of how estimates of mortalities of unmarked DIT groups in MSFs and unsampled non-selective fisheries would be made available to analysts. It was concluded that estimation of these imputed mortalities is necessary for the analytical work by the coho and Chinook technical committees and this data should be available on RMIS. A joint workgroup is to develop a plan for accomplishing the goal of providing these imputed mortalities. This plan is to include what information is necessary, how it should be reported to RMIS and how the estimates should be made.

Recommendations and Issues Requiring PSC Direction

Proposal Review Process

- It is recommended that the Commission reissue its call to agencies for proposals for all potential MSFs and for agencies to provide preliminary and final reports on the conduct of MSFs.

- In order to assist the agencies in achieving this goal, it is recommended that the SFEC provide a table of indicator stocks and DIT groups by hatchery facility to the agencies with the proposal template each year.

Interagency Coordination and Cooperation
MM, DIT, and CWT sampling programs are not sufficiently coordinated to support analysis by PSC technical committees. U.S. legislation requiring MM at federal facilities will impose increased sampling costs on Alaska and Canada; inadequate representation of stocks of concern and the lack of coastwide electronic tag detection will negatively impact the potential utility of DIT. The PSC should support the establishment of a policy level process to develop formal agreements to clarify responsibilities for maintaining a functional CWT system.

Representation on SFEC
All agencies that are proposing MSFs should be represented on the SFEC.

SPECIAL ASSIGNMENT: REVIEW OF MARKING FOR CODED-WIRE TAGS AND MARK SELECTIVE FISHING.
SFEC (05)-2 – February, 2006

Background

At the PSC Post-Season Meeting held in January, 2006 the Commissioners tasked the Selective Fishery Evaluation Committee (SFEC) with a special assignment, which arose from the Commissioner's discussion of the CWT Expert Panel Report. This special assignment requested the SFEC provide answers to three specific questions related to marking of salmon for the purpose of identifying coded-wire tags (CWT) and for selective harvest of hatchery origin salmon in mark selective fisheries (MSF). The full text of this assignment and these three specific questions are provided in Appendix 1.

The PSC Commissioners instructed the SFEC to provide a response no later than the PSC Annual Meeting (February 14-17, 2006). Due to the limited amount of time available, the SFEC focused on Question 1. The scope of the work was restricted mainly to answering the specific questions as worded in the original tasking from the Commissioners. However, some additional information is provided where possible in the time available. For example, mortality rate information is summarized for some alternative marks, in addition to the mortality rate for ventral fin clips specifically requested in Question 1. The SFEC did not address other important questions regarding marking of salmon that were identified in the CWT Expert Panel Report

SFEC Conclusions

Question 1: the SFEC concludes that, of the marks examined that met the necessary criteria for retention to adult and minimum size for application, all alternative marks had mortality rates that were higher and more variable than those associated with adipose fin clips, for both coho and Chinook.

Question 2: the SFEC concludes that re-sequestering the adipose fin would partially restore the type and quality of information. However, recent decreases in fishery size and structure, and in sampling coverage and intensities, have also decreased precision and accuracy of exploitation rates. These issues will not be addressed simply by re-sequestering the adipose fin.

Question 3: the SFEC concludes that resequestering the adipose fin clip and using an alternative mass mark will impair our ability to estimate total mortality and exploitation rates of the unmarked fish using the double index tag system (DIT), if there is an additional delayed mortality due to the alternative mark, and if the delayed mortality continues through to adult escapement. The ability to estimate exploitation rates for marked fish will also be impaired.

Publications of the Pacific Salmon Commission

PART VI
PUBLICATIONS OF THE PACIFIC SALMON COMMISSION

Documents listed herein are available to domestic fishery agencies of Canada and the United States, research organizations, libraries, scientists and others interested in the activities of the Commission, through the offices of the Secretariat, 600 - 1155 Robson Street, Vancouver, B.C., V6E 1B5. Photocopying charges may be levied for documents which are out of print.

Reports published by the Pacific Salmon Commission after March 31, 2000 including Commission annual reports, annual reports of the Fraser River Panel, Joint Technical Committee reports and technical reports of the Pacific Salmon Commission are also available in full text format on the Commission's website at www.psc.org.

Documents listed here are those which were published during the period from 2005/06 inclusive. For previous publications, please refer to the Pacific Salmon Commission's website at www.psc.org/publications.

A. ANNUAL REPORTS

19. Pacific Salmon Commission 2003/04 Nineteenth Annual Report. June 2005.

B. REPORTS OF JOINT TECHNICAL COMMITTEES

i. Joint Chinook Technical Committee

47. TCCHINOOK(05)-1 *Standardized Fishing Regime for Northern British Columbia Troll and Queen Charlotte Islands Sport Fisheries*, June 2005.

48. TCCHINOOK(05)-2 *Catch and Escapement of Chinook Salmon under Pacific Salmon Commission Jurisdiction, 2004*, October 2005.

49. TCCHINOOK (05)-3 *Annual Exploitation Rate Analysis and Model Calibration*, December 2005

ii. Joint Chum Technical Committee

No reports were finalized for publication during this reporting period.

iii. Joint Coho Technical Committee

No reports were finalized for publication during this reporting period.

iv. Joint Data Sharing Technical Committee

No reports were finalized for publication during this reporting period.

v. Joint Northern Boundary Technical Committee

28. TCNB (05)-2 *Stock Composition Estimates and Individual Stock Assignments based on Genetic Microsatellites and Scale Patterns for Test Mixtures of Alaskan and Canadian Sockeye Salmon,* June, 2005.

29. TCNB (06)-1 *U.S./Canada Northern Boundary Area 2005 Salmon Fisheries Management Report and 2006 Preliminary Expectations,* January 2006.

vi. Joint Transboundary Technical Committee

34. TCTR (05)-1 *Estimates of Transboundary River Salmon Production, Harvest and Escapement and a Review of Joint Enhancement Activities in 2003.* September, 2005.

35. TCTR (05)-2 *Estimates of Transboundary River Salmon Production, Harves and Escapement and a Review of Joint Enhancement Activities in 1999.* September, 2005.

36. TCTR (05)-3 *Estimates of Transboundary River Salmon Production, Harves and Escapement and a Review of Joint Enhancement Activities in 1996.* November, 2005.

37. TCTR (05)-4 *Estimates of Transboundary River Salmon Production, Harves and Escapement and a Review of Joint Enhancement Activities in 1997.* December, 2005.

vii. Selective Fishery Evaluation Committee

7. SFEC (05)-1 - *Review of 2005 Mass Marking and Mark Selective Fishery Proposals.* September 2005.

8. SFEC (06)-1 *Special Assignment: Review of Marking for Coded-Wire Tags and Mark selective Fishing.* February, 2006.

C. REPORTS OF THE FRASER RIVER PANEL

16. *Report of the Fraser River Panel to the Pacific Salmon Commission on the 2002 Fraser River Sockeye Salmon Fishing Season.* PSC Staff. June 2005.

D. TECHNICAL REPORT SERIES OF THE PACIFIC SALMON COMMISSION

16. Xie, Y, A.P. Gray, F.J. Martens, J.L. Boffey, and J.D. Cave. *Use of Dual-Frequency Identification Sonar to Verify Split-Beam Estimates of Salmon Flux and to Examine Fish Behaviour in the Fraser River.* PSC Tech. Rep. No. 16, November 2005.

17. Boyce, I.M. and J.E. Andel. *Mark-recapture Studies of Taku River Adult Sockeye Salmon Stocks in 2003.* PSC Tech Rep. No. 17, December 2005

18. *Report of the Expert Panel on the Future of the Coded Wire Tag Program for Pacific Salmon.* PSC Tech Rep. No. 18, November 2005.

19. Boyce, I.M., S.A. McPherson, D.R. Bernard, and E.L. Jones III. *Spawning Abundance of Chinook Salmon in the Taku River in 2003.* PSC Tech Rep. No. 19, March 2006.

E. PUBLICATIONS BY PACIFIC SALMON COMMISSION SECRETARIAT STAFF

No reports were finalized for publication during this reporting period.

F. REPORTS OF THE INTERNATIONAL PACIFIC SALMON COMMISSION

Responsibility for maintenance of the library of the International Pacific Salmon Fisheries Commission, on its termination December 31, 1985, was transferred to the Pacific Salmon Commission. Documents in the Library include historical archival papers which are available to researchers and other interested parties through contact with the Pacific Salmon Commission's Librarian.

Publication of John F. Roos' History of the International Pacific Salmon Fisheries Commission, and P. Gilhousen's Estimation of Fraser River Sockeye Escapements ended all publication series of the International Pacific Salmon Fisheries Commission. Copies of all in-print Progress Reports and Bulletins of the International Pacific Salmon Fisheries Commission are available free of charge through the Library of the Pacific Salmon Commission. Copies of the History of the International Pacific Salmon Fisheries Commission may also be ordered through the Library of the Pacific Salmon Commission.

G. DOCUMENTS SUBMITTED BY THE PARTIES

In compliance with provisions of the Treaty, the Parties provide annual post-season fishery reports and updates on their respective salmonid enhancement programs to the Commission. Documents received during 2005/06 were:

1. *Post Season Report for 2005 Canadian Treaty Limit Fisheries.* Canada Department of Fisheries and Oceans. December 20, 2005.

2. *2004 Report on the Salmonid Enhancement Program in British Columbia.* Canada Department of Fisheries and Oceans. March, 2005.

3. *Preliminary 2005 Post Season Report for United States Salmon Fisheries of Relevance to the Pacific Salmon Treaty.* United States Section, Pacific Salmon Commission. December, 2005.

4. *2003 Annual Report on the Salmon Enhancement Activities of the United States.* United States Section, Pacific Salmon Commission. August, 2006.

Unaudited Financial Statements for 2005/2006

PART VII
UNAUDITED FINANCIAL STATEMENTS FOR THE PERIOD APRIL 1, 2005 TO MARCH 31, 2006

Unaudited Financial Statements of

PACIFIC SALMON COMMISSION

Year ended March 31, 2006

Pacific Salmon Commission

Statement of Financial Position (Unaudited)

(Expressed in Canadian dollars)

March 31, 2006, with comparative figures for 2005

		Restricted						
	General Fund	Working Capital Fund	Test Fishing Fund	Special Research Fund	Capital Assets Fund	Total	2006 Consolidated	2005 Consolidated restated
Assets								
Current assets:								
Cash and cash equivalents	$ 1,228,039	104,284	441,588	124,280		670,152	1,898,191	$ 1,732,876
Accounts receivable	115,343					-	115,343	240,921
Interest receivable	3,389					-	3,389	2,703
Prepaid expenses	23,389					-	23,389	11,655
	1,370,160	104,284	441,588	124,280	-	670,152	2,040,312	1,988,155
Capital assets (note 3)					470,547	470,547	470,547	463,542
	$ 1,370,160	$ 104,284	$ 441,588	$ 124,280	$ 470,547	1,140,699	$ 2,510,859	$ 2,451,697
Liabilities and Fund Balances								
Current liabilities:								
Accounts payable and accrued liabilities	$ 161,099					-	$ 161,099	$ 730,794
Accrual for Benefit obligation (note 6)	315,549					-	$ 315,549	$ 199,163
Deferred Income	873,391					-	873,391	7,034
	1,350,039	-	-	-	-	-	1,350,039	936,991
Fund balance (note 4)	20,121	104,284	441,588	124,280	470,547	1,140,699	1,160,820	1,514,706
	$ 1,370,160	$ 104,284	$ 441,588	$ 124,280	$ 470,547	1,140,699	$ 2,510,859	$ 2,451,697

Pacific Salmon Commission

Statement of Finanacial Activity and Fund Balances (Unaudited)

March 31, 2006 and 2005

		Restricted						
	General Fund	Working Capital Fund	Test Fishing Fund	Special Research Fund	Capital Assets Fund	Total	2006 Consolidated	2005 Consolidated
	restated							restated
Fund balance, beginning of year	$ 295,197	$ 101,821	$ 500,598	$ 153,548	$ 463,542	$ 1,219,509	1,514,706	$ 1,303,536
Revenue:								
Contributions from contracting parties	3,091,014					-	3,091,014	2,984,234
Grants	6,542			11,489		11,489	18,031	228,743
Interest	38,731	2,463				2,463	41,194	26,873
Other	43,226					-	43,226	
Gain on disposal of capital assets	5,567					-	5,567	(2,437)
Test fishing	608,230					-	608,230	485,019
	3,793,310	2,463	0	11,489	0	13,952	3,807,262	3,722,432
Expenditures:								
Amortization					169,800	169,800	169,800	172,113
Salaries and employee benefits	2,480,170					-	2,480,170	2,084,106
Travel and transportation	104,711					-	104,711	96,019
Rents and communication	104,552					-	104,552	113,920
Printing and reproductions	13,141					-	13,141	10,790
Contract services	514,183					-	514,183	466,341
Materials and supplies	61,963					-	61,963	45,415
Foreign Exchange	4,630					-	4,630	11,356
Test fishing	667,241					-	667,241	484,420
Consultaitons and Workshops				40,757		40,757	40,757	26,782
	3,950,591	0	-	40,757	169,800	210,557	4,161,148	3,511,262
Excess (deficiency) of revenue over expenditures	(157,281)	2,463	0	(29,268)	(169,800)	(196,605)	(353,886)	211,170
Interfund Transfers	(117,795)		(59,010)		176,805	117,795	(0)	-
Fund balance, end of year	$ 20,121	$ 104,284	$ 441,588	$ 124,280	$ 470,547	$ 1,140,698	$ 1,160,820	$ 1,514,706

PACIFIC SALMON COMMISSION

Statement of Cash Flows (Unaudited)
(Expressed in Canadian dollars)

Year ended March 31, 2006, with comparative figures for 2005

	2006	2005 Restated
Cash provided by (used in):		
Operations:		
Excess (deficiency) of revenue over expenses	$ (353,886)	$ 211,170
Items not involving cash:		
Amortization	169,800	172,113
Loss (gain) on asset dispositions	(5,567)	2,437
Net change in non-cash operating working capital	526,206	3,951
	336,553	389,671
Investing:		
Additions to capital assets	(177,383)	(343,624)
Proceeds on sale of assets	6,145	20,408
	(171,238)	(323,216)
Increase (decrease) in cash	165,315	66,455
Cash, beginning of year	1,732,876	1,666,421
Cash, end of year	$ 1,898,191	$ 1,732,876

See accompanying notes to financial statements.

PACIFIC SALMON COMMISSION

Notes to Financial Statements
(Expressed in Canadian dollars)

Year ended March 31, 2006

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1. Nature of organization:

The Pacific Salmon Commission (the "Commission") was established by the Treaty between the Governments of Canada and the United States of America (the "Contracting Parties") to promote cooperation in the management, research and enhancement of Pacific salmon stocks. The Treaty was ratified on March 18, 1985 and renewed on June 30, 1999, and the Commission commenced operations on September 26, 1985.

2. Significant accounting policies:

(a) Basis of accounting:

These financial statements present the financial position and results of operation of the Commission to comply with the requirements of the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific Salmon, and may not be appropriate for other purposes. As required, the financial statements are prepared on an accrual basis except that purchase order expenditures are recognized at the time that the commitment for goods and services are made, rather than at the time that the goods or services are delivered. In all other material respects, these financial statements have been prepared in accordance with Canadian generally accepted accounting principles.

(b) Fund accounting:

The Commission follows fund accounting procedures, giving recognition to restrictions on the use of resources specified by the Contracting Parties. The Fund classifications are as follows:

(i) The General Fund includes funds provided annually through contributions from the Contracting Parties and any net surplus obtained through the test fishing program. By agreement of the Contracting Parties, any unexpended balance remaining at the end of one fiscal year may be used to offset contributions in the following year or may be used to offset a shortfall between contributions and approved expenditures in the following year.

(ii) The Working Capital Fund represents monies contributed by the Contracting Parties to be used temporarily pending receipt of new contributions from the Contracting Parties at the beginning of a fiscal year, or for special programs not contained in the regular budget but approved during the fiscal year. Any surplus above a pre-determined fixed limit in the account at the end of the fiscal year is transferred to the General fund and is treated as income.

2. Significant accounting policies (continued):

(b) Fund accounting (continued):

(iii) The Test Fishing Fund is established as a revolving fund in which a portion of net test fishing revenues realized in years of high abundance are reserved to be used to support test fishing programs in years of low abundance and when conservation concerns are an issue.

(iv) The Special Research Fund represents monies set aside to fund additional programs as determined by the Contracting Parties, including Coded Wire Tag Investigation, studies related to Coho salmon and Bilateral Workshop for Genetics Analysis Pacific Salmonids Group.

(v) The Capital Assets Fund reflects the Commission's capital asset transactions. Amortization is charged to the Capital Fund.

(vi) Revenue recognition:

The Commission follows the restricted fund method of accounting for contributions from Contracting Parties.

Restricted contributions related to general operations are recognized as revenue of the General Fund in the year in which the related expenses are incurred. All other restricted contributions are recognized as revenue of the appropriate restricted fund.

Unrestricted contributions are recognized as revenue of the General Fund in the year received or receivable if the amount to be received can be reasonably established and collection is reasonably assured.

(c) Trust funds:

(i) The Commission administers and holds in trust the Northern Boundary and Transboundary Rivers Restoration and Enhancement Trust Fund and the Southern Boundary Restoration and Enhancement Trust Fund. These trust funds have been excluded from the Commission's financial statements.

(ii) The Commission also administers and holds in trust funds on behalf of the Government of the United States (the "Government") to disburse payroll to certain employees. These trust funds have been excluded from the Commission's financial statements.

2. Significant accounting policies (continued):

(d) Portfolio investments:

Portfolio investments are recorded at lower of cost and other than temporary decline in market value. Gains and losses are recognized when they are realized at the trust level.

(e) Capital assets:

Capital assets are stated at cost. Costs of repairs and replacements of a routine nature are charged as a current expenditure while those expenditures which improve or extend the useful life of the assets are capitalized. Amortization is provided using the straight-line method of rates sufficient to amortize the costs over the estimated useful lives of the assets. The rates of amortization used on an annual basis are:

Automobiles	20%
Boats	20%
Computer equipment and software	30%
Equipment	20%
Furniture and fixtures	10%
Leasehold improvements	10%

(f) Income taxes:

The Commission is a non-taxable organization under the Foreign Missions and International Organizations Act (1991).

(g) Post-employment benefits:

The Commission provides certain employee future benefits, including a defined benefit pension plan, which is funded by the Commission on an annual basis, and severance, life insurance and medical benefits, which are funded by the Commission as they become due.

The Commission accrues its obligations under employee benefit plans and the related costs as benefits are earned, net of returns on plan assets.

(g) Post-employment benefits (continued):

The Commission's policies are as follows:

(i) The cost of retirement benefits earned by employees is actuarially determined using the projected benefit method prorated on service and management's best estimate of expected plan investment performance, salary escalation and retirement ages of employees.

(ii) The expected interest cost on any prior service obligation is calculated using management's estimate for the long-term rate of return.

(iii) The expected return on plan assets is calculated at a market-related value for the assets.

(iv) Any cumulative unrecognized actuarial gains and losses in excess of 10% of the projected benefit obligation will be amortized over the expected average remaining service life of the employee group covered by the program.

(h) Foreign exchange translation:

Transactions originating in foreign currencies are translated at the exchange rate prevailing at the transaction dates. Assets and liabilities denominated in foreign currency at the balance sheet date are translated to equivalent Canadian amounts at the current rate of exchange.

Foreign exchange gains and losses resulting from translation are included in the determination of excess or deficiency of revenue over expenditures.

(i) Use of estimates:

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the reporting period. Significant areas requiring the use of management estimates relate to the determination of the valuation of accounts receivable, useful lives of capital assets for amortization and accrued liabilities. Actual results could differ from those estimates. Adjustments, if any, will be reflected in operations in the period of settlement.

3. Capital assets:

	Cost	Accumulated amortization	2006 Net book Value	2005 Net book Value
Automobiles	$ 228,844	$ 145,694	$ 83,150	$ 47,591
Boats	130,527	103,979	26,548	30,943
Computer equipment	653,850	579,372	74,478	76,035
Computer software	175,411	163,772	11,639	19,736
Equipment	919,585	729,318	190,267	210,231
Furniture and fixtures	301,427	250,099	51,328	59,453
Leasehold improvements	77,138	44,001	33,137	19,553
	$ 2,486,782	$ 2,016,235	$ 470,547	$ 463,542

4. General fund balance:

The Commission has approved a carryover (use) of the unexpended funds in the General Fund to be utilized as follows:

	2006	2005
Continuing operations	$ (3,268)	$ 283,542
Reserve for prepaid expenses	23,289	11,655
	$ 20,121	$ 295,197

5. Contracting parties:

The Commission's only related parties are the Contracting Parties.

During the fiscal year ended March 31, 2006, the Commission received contributions from Contracting Parties totaling $3,091,014 (2005 - $2,984,234). The Commission made no expenditures to the Contracting Parties during the year.

The Commission received $873,391 (2005 - nil) of contributions from one of the Contracting Parties relating to fiscal year March 31, 2007. This contribution is recorded as deferred revenue.

6. Employee benefits:

The Commission and its employees contribute to the Pension Plan of the International Fisheries Commissions Pension Society for Employees of Participating Commissions with Headquarters in Canada, a multi-employer defined benefit plan. The plan covers 66 employees, of which 40 are employees of the Commission.

As a member of this plan the Commission has recorded accrued benefit liability of $315,549 (2005-$199,163). The net benefit plan expense is included in salaries and employee benefits on the Statement of Financial Activity and Fund Balances.

7. Financial instruments:

The financial instruments consist of accounts receivable, interest receivable and accounts payable and accrued liabilities. The carrying amounts of these financial instruments are a reasonable estimate of their fair values due to the relatively short term to maturity.

8. Trust funds:

(a) Northern Boundary and Transboundary Rivers Restoration and Enhancement Trust Fund:

The Commission holds contributions in trust for this Fund. The income earned on these contributions is distributed by the Commission as directed by the Northern Enhancement Committee. Schedule 1 provides details of this trust fund's balances and activities for the year.

(b) Southern Boundary and Transboundary Rivers Restoration and Enhancement Trust Fund:

The Commission holds contributions in trust for this Fund. The income earned on these contributions is distributed by the Commission as directed by the Southern Enhancement Committee. Schedule 2 provides details of this trust fund's balances and activities for the year.

(c) Restricted cash:

The Commission administers and holds trust funds on behalf of the Government of the United States (the "Government") to distribute payroll to certain employees.

8. Trust funds (continued):

(d) Summary of trust fund balances:

	Northern Boundary	Southern Boundary	Restricted Cash	2006 Total	2005 Total
Assets:					
Cash and term deposits	$ 3,891,493	$ 3,520,083	$ 53,435	$ 7,465,011	$ 7,607,711
Portfolio investments	106,685,155	91,200,025	-	197,885,180	200,964,363
Interest receivable	4,717	342	-	5,059	212
	$ 110,581,365	$ 94,720,450	$ 53,435	$ 205,355,250	$ 208,662,286
Liabilities and Net Assets:					
Accounts payable and accrued liabilities	$ 151,237	$ 1,078,158	$ 53,435	$ 1,282,830	$ 885,362
Fund balances	110,430,128	93,642,128	-	204,072,420	207,776,924
	$ 110,581,365	$ 94,720,450	$ 53,435	$ 205,355,250	$ 208,662,286

PACIFIC SALMON COMMISSION

Trust Fund Balances and Activity

Schedule 1

Northern Boundary and Transboundary Rivers Restoration
and Enhancement Trust Fund
(stated in Canadian Funds)

March 31, 2006 and 2005

	2006	2005
Assets		
Cash and term deposits	$ 3,891,493	$ 4,276,729
Portfolio investments (market value - $119,571,293)	106,685,155	107,665,740
Interest receivable	4,717	37
		-
	$ 110,581,365	$ 111,942,506
Liabilities		
Accounts payable and accrued liabilities	$ 151,237	$ 116,221
Fund balance	110,430,128	111,826,285
	$ 110,581,365	$ 111,942,506
Summary of Activity		
Fund balance, beginning of year	$ 111,826,285	$ 106,874,128
Revenue:		
Interest earned on term deposits	62,741	7,283
Realized gain on investments	3,254,535	9,536,257
	3,317,276	9,543,540
Expenditures:		
Salaries and benefits	74,274	62,020
Travel and accommodation	34,570	43,156
Rents and communications	413	666
Contract services	665,685	635,758
Project Grants	2,838,576	1,475,159
Materials and supplies	4,122	511
	3,617,640	2,217,270
Net activity before foreign exchange adjustment	111,525,921	114,200,398
Foreign exchange loss	(1,095,793)	(2,374,113)
Fund balance, end of year	$ 110,430,128	$ 111,826,285

PACIFIC SALMON COMMISSION

Trust Fund Balances and Activity

Schedule 2

Southern Boundary Restoration and Enhancement Trust Fund
(stated in Canadian Funds)

March 31, 2006 and 2005

	2006	2005
Assets		
Cash and term deposits	$ 3,520,083	$ 3,420,982
Portfolio investments (market value - $101,592,041)	91,200,025	93,298,623
Interest receivable	342	175
	$ 94,720,450	$ 96,719,780
Liabilities		
Accounts payable and accrued liabilities	$ 1,078,158	$ 769,141
Fund balance	93,642,292	95,950,639
	$ 94,720,450	$ 96,719,780
Summary of Activity		
Fund balance, beginning of year	$ 95,950,639	$ 93,381,899
Revenue:		
Interest earned on term deposits	20,729	4,531
Realized gain (loss) on investments	2,799,333	8,211,099
	2,820,062	8,215,630
Expenditures:		
Salaries and benefits	74,274	62,057
Travel and accommodation	30,897	30,170
Rents and communications	1,054	1,054
Contract services	606,453	593,292
Project Grants	3,462,570	2,909,102
Materials and supplies	4,585	819
	4,179,833	3,596,494
Net activity before foreign exchange adjustment	94,590,868	98,001,035
Foreign exchange loss	(948,576)	(2,050,396)
Fund balance, end of year	$ 93,642,292	$ 95,950,639

Appendices

Appendix A

Northern Fund Projects for 2005/2006

	Northern Fund Projects ENHANCEMENT 3			CAN $	US$
1	Trapper Lake Sockeye Access Improvement	Mercer	DFO	$ 84,670	$ 68,244
2	Evaluation of enhancement options for Morice Lake	Joseph	Wetsuweten	$ 24,960	$ 20,118
3	Tatsamenie Review	Josephson	ADFG	$ 37,200	$ 30,000
				$ 146,830	$ 118,362

	Northern Fund Projects HABITAT 6			CAN$	US$
1	Kitwanga River Sockeye Enhancement	Cleveland	GFA	$ 21,950	$ 17,692
2	Kitwanga Coho Habitat	Cleveland	GFA	$ 11,392	$ 9,182
3	Little Klukshu Sockeye Habitat Restoration	Workman	CAFN	$ 15,500	$ 12,493
4	Hwy 16 & CN Rail fish passage asst & restn. Lower Skeena	Gottesfeld	SFC	$ 38,000	$ 30,628
5	Evaluation of restoration works in the Lower Nass	Stephens	Nisga'a	$ 53,775	$ 43,343
6	Lakelse - Hatchery Creek spawning habitat improvement	Maxwell	LW Soc	$ 28,750	$ 23,173
				$ 169,367	136,510

	Northern Fund Projects IMPROVED INFORMATION 19			CAN $	US$
1	Kitwanga River Salmon Enumeration	Cleveland	GFA	$ 50,358	$ 40,589
2	Blanchard River Chinook & Sockeye Video Enumeration	Workman	CAFN	$ 25,850	$ 20,835
3	DNA Stock ID of Northern BC Chinook	Beacham	DFO	$ 200,000	$ 161,200
4	Molecular Genetic Lab Infrastructure Upgrading	Beacham	DFO	$ 565,440	$ 456,000
5	Lakelse tributary sockeye monitoring & mapping	McKenzie	Kitselas FN	$ 18,202	$ 14,671
6	Fishery Operations System Importer Module Development	Patten	DFO	$ 29,925	$ 24,120
7	Upper Nass mark-rate sampling for coho in the Upper Nass	Stephens	Nisga'a	$ 65,000	$ 52,390
8	Middle and Upper Nass coho telemetry	Stephens	Nisga'a	$ 235,000	$ 189,410
9	Early Marine Juvenile Salmon and Sea Lice survey 2005	Ryan	Tsimshian	$ 150,007	$ 120,906
10	Population estimate, distribution & DNA of Stikine coho	Etherton	DFO/ADFG	$ 85,000	68,510
11	Pink forecast in SE Alaska	Wertheimer	NOAA Fish	$ 217,062	$ 175,050
12	Habitat-based chinook escpm't goal calibration - clear rivers BC	Parken	DFO	$ 41,300	$ 33,288
13	Stikine fish sustainability plan - scoping project	Erhardt	Tahltan	$ 23,330	$ 18,804
14	Building infrastructure for stock ID of salmon in N PSC fisheries	Seeb	ADFG	$ 790,500	$ 620,000
15	Assessing historical salmon productivity using stable isotopes	Barto	ADFG	$ 119,040	$ 96,000
16	Electronic collection & transfer of salmon fishery biological data	Wilcock	ADFG	$ 198,400	$ 160,000
17	Area 3,4,5, Salmon net catch monitoring	Wagner	DFO	$ 70,848	$ 57,103
18	Radio tag tracking for Stikine River chinook & sockeye 2005	Waugh	DFO	$ 140,000	$ 112,840
19	Molecular genetics Lab Infrastructure Upgrading	Wilmot	NOAA Fish	$ 254,200	$ 205,000
				$ 3,279,462	$ 2,626,715
				$ 3,595,659	**$ 2,881,587**

Appendix B

Southern Fund Projects for 2005/2006

	Southern Fund Project Concepts ENHANCEMENT 4				CAN $		US$
1	DNA sampling of broodstock Cultus Lake sockeye	Latham	PSC	$	7,121	$	6,049
2	Campbell River mainstem chinook enhancement	Gage	Tyee Club	$	13,328	$	11,321
3	Upper Adams Sockeye 2005 fry supplementation	Lofthouse	DFO	$	84,548	$	71,815
4	Millstone Creek By-pass Channel	Sheng	DFO	$	8,480	$	7,203
				$	113,477	$	96,388
	Southern Fund Project Concepts HABITAT 24				**CAN $**		**US$**
1	Little Qualicum storage weir upgrade	Craig	BCCF	$	77,000	$	65,404
2	Creighton Creek Streamflow recovery Phase II	Jewitt	WCRC	$	16,653	$	14,145
3	Gilligan's Island Dike Removal	Smith	SRSC	$	157,242	$	133,562
4	Cowichan River Water Use and Conservation Strategy	Adkins	DFO	$	50,000	$	42,470
5	Chilliwach River off-channel habitat project	Lamson	CRAC	$	68,900	$	58,524
6	Cherry Valley Restoration project	Donovan	DU	$	232,143	$	197,183
7	Kennedy Flats salmon habitat restoration	Warttig	CWFS	$	122,000	$	103,627
8	Wolfe Creek culvert replacement	Werner	TEP	$	65,870	$	55,950
9	Mechanisims regulating the production of coho, chinook and steelhead	Beamish	DFO	$	199,800	$	169,710
10	Cowichan Estuary-eelgrass restoration project	Archibald	CCLTS	$	53,174	$	45,166
11	Guichon Creek Irrigation Ditch decommissioning	Bennett	DFO	$	55,000	$	46,717
12	Mashiter Creek instream habitat restoration	Hryhorczuk	BCCF	$	16,138	$	13,708
13	Huwer groundwater Channel Phase II	Jewitt	WCRC	$	29,492	$	25,051
14	Kauwinch River Fish habitat restoration project	Day	AMS	$	35,536	$	30,184
15	Coldwater River Habitat Restoration	Todd	NTA	$	69,190	$	58,770
16	Cowichan sediment source assessment	Craig	BCCF	$	58,865	$	50,000
17	South Sarita Test Pits	Ochman	HFN	$	7,380	$	6,269
18	Mamquam River Floodplain restoration	Tobe	SRWS	$	87,400	$	74,238
19	Hope Slough habitat restoration project	Durand	FVRWC	$	42,800	$	36,354
20	Bonaparte River restoration program	Bennett	DFO	$	58,430	$	49,630
21	Cowichan Chinook incubation & sediment study	Sheng	DFO	$	17,015	$	14,453
22	Nooksack Basin Stream Habitat Restoration	Scherrer	NSEA	$	88,297	$	75,000
23	Culvert and wier passage improvements in the BC Interior	Carlson	DFO	$	158,400	$	134,545
24	Lower Deschutes River riparian restoration plan	Brun	CTWSOR	$	14,740	$	12,520
				$	1,781,465	$	1,513,180
	Southern Fund Project Concepts IMPROVED INFORMATION 18				**CAN $**		**US$**
1	Microsatelite variation in southern BC chinook	Beacham	DFO	$	221,520	$	188,159
2	Feasibility study for catch and release sockeye	English	LGL	$	231,860	$	196,942
3	Electronic Counter on the Coldwater	Chamberlain	DFO	$	51,315	$	43,587
4	DNA of catch and release WCVI chinook	Luedke	DFO	$	71,000	$	60,307
5	Horsefly sockeye estimation using a DIDSON	Holmes	DFO	$	134,432	$	114,187
6	Nearshore habitat use of chinook and coho in Puget Sound	Greene	NOAA	$	218,450	$	185,552
7	Nimpkish River chinook evaluation	McCorquodale	NRMB	$	10,316	$	8,762
8	Skagit River Fish passage prioritization	Welch	SFEG	$	46,444	$	39,450
9	Pre season forcasts of ocean escapements of Columbia chinook	Hyun	CRITFC	$	119,300	$	101,333
10	Determination of Cultus Lake sockeye migration timing	Welch	Kintama	$	198,350	$	168,478
11	Extension of the Chinook Microsatellite Baseline	Narum	CRITFC	$	77,306	$	65,664
12	Methods to evaluate exploitation estimates	Ashbrook	WDFW	$	18,767	$	15,941
13	Multispecies migration & Improved escapement enumeration	Nagtegaal	DFO	$	132,328	$	112,399
14	ID and assessment of chinook on the Suislaw River	Clemons	ODFW	$	156,217	$	132,691
15	POST acoustic tagging of Sakinaw sockeye	Wood	DFO	$	30,000	$	25,482
16	Habitat based chinook escapement - small WCVI	Parken	DFO	$	51,720	$	43,931
17	Moisture Management for Irrigators	Hallinan	FBC	$	30,000	$	25,482
18	Thermal marking of hatchery salmon	Hop Wo	DFO	$	47,580	$	40,414
				$	1,846,905	$	1,568,761
				$	**3,741,847**	**$**	**3,178,329**

Appendix C

Appointment of Officers for 2005/2006

Effective December 1, 2005 a new slate of officers for the Pacific Salmon Commission was identified as follows:

OFFICE	COUNTRY	REPRESENTATIVE
Commission Chair	U.S.	Larry Rutter
Commission Vice-Chair	Can	Paul Sprout
Fraser River Panel Chair	U.S.	John Long
Fraser River Panel Vice-Chair	Can	Paul Ryall
Northern Panel Chair	U.S.	Gordon Williams
Northern Panel Vice-Chair	Can.	David Einarson
Southern Panel Chair	U.S.	TBA
Southern Panel Vice-Chair	Can.	Gordon McEachen
Transboundary Panel Chair	U.S.	John H Clark
Transboundary Panel Vice-Chair	Can.	TBA
Stan. Comm. on F&A - Chair	U.S.	Rollie Rousseau
Stan. Comm. on F&A - Vice-Chair	Can.	Paul Macgillivray
Stan. Comm. on Scientific Cooperation - Chair	Can.	Laura Richards
Stan. Comm. on Scientific Cooperation - Vice-Chair	U.S.	Steve Pennoyer
Technical Committee on Data Sharing - Co-Chair	U.S.	Norm Sands
Technical Committee on Data Sharing - Co-Chair	Can.	Chuck Parken
Fraser River Panel Technical Committee - Co-Chair	U.S.	Gary Graves
Fraser River Panel Technical Committee - Co-Chair	Can.	Les Jantz
Northern Boundary Technical Committee - Co-Chair	U.S.	Glen Oliver
Northern Boundary Technical Committee - Co-Chair	Can.	David Peacock
Transboundary Technical Committee - Co-Chair	U.S.	Scott Kelley
Transboundary Technical Committee - Co-Chair	Can.	Sandy Johnston
Enhancement Subcommittee of the Transboundary Technical Committee - Co-Chair	U.S.	Ron Josephson
Enhancement Subcommittee of the Transboundary Technical Committee - Co-Chair	Can.	Pat Milligan
Joint Technical Committee on Chinook - Co-Chair	U.S.	Del Simmons
Joint Technical Committee on Chinook - Co-Chair	Can.	Rick McNicol
Joint Technical Committee on Coho - Co-Chair	U.S.	Gary Morishima
Joint Technical Committee on Coho - Co-Chair	Can.	Wilf Luedke
Joint Technical Committee on Chum - Co-Chair	U.S.	Amy Seiders
Joint Technical Committee on Chum - Co-Chair	Can.	Leroy Hop Wo
Selective Fishery Evaluation Committee - Co-Chair	U.S.	Gary Morishima
Selective Fishery Evaluation Committee - Co-Chair	Can.	Brent Hargreaves

Appendix D

Approved Budget FY 2006/2007

1. INCOME		
A.	Contribution from Canada	$1,746,783
B.	Contribution from U.S.	$1,746,783
	Sub total	$3,493,567
C.	Carry-over from 2005/2006	$ 127,315
D.	Interest	$ 15,000
E.	Other income	$ 0
F.	Total Income	$3,635,882
2. EXPENDITURES		
A.	1. Permanent Salaries and Benefits	$2,224,854
	2. Temporary Salaries and Benefits	$ 382,566
	3. Total Salaries and Benefits	$2,607,420
B.	Travel	$ 121,814
C.	Rents, Communications, Utilities	$ 143,669
D.	Printing and Publications	$ 22,100
E.	Contractual Services	$ 527,122
F.	Supplies and Materials	$ 76,470
G.	Equipment	$ 137,287
H.	Total Expenditures	$3,635,882
3. BALANCE (DEFICIT)		$ 0
4. TEST FISHING PROGRAM		
A.	Forecast Revenues	$715,415
B.	Forecast Expenditures	$711,880
C.	Forecast Balance	$ 3,536
5. TOTAL BALANCE (DEFICIT)		$ 3,536

Appendix E

Pacific Salmon Commission Secretariat Staff as of March 31, 2006

EXECUTIVE OFFICE

Don Kowal
Executive Secretary

Teri Tarita
Records Administrator/Librarian

Kathy Mulholland
Information Technology Manager

Kimberly Bartlett
Secretary

Sandie Gibson
Information Technology Support Specialist

Vicki Ryall
Meeting Planner

FINANCE & ADMINISTRATION

Kenneth N. Medlock
Controller

Bonnie Dalziel
Accountant

Angus Mackay
Fund Manager

Victor Keong
Program Assistant Restoraton & Enhancement Funds

FISHERY MANAGEMENT

Mike Lapointe
Chief Biologist

Jim Gable
Head, Stock Identification Group

Jim Cave
Head, Stock Monitoring Group

Steve Latham
Stock Identification Biologist, Sockeye

Ian Guthrie
Head, Biometrics

Bruce White
Stock Identification Biologist, Pinks

Yunbo Xie
Hydroacoustics Scientist

Keith Forrest
Test Fishing Biologist

Andrew Gray
Hydroacoustics Biologist

Maxine Reichardt
Senior Scale Analyst

Fiona Martens
Hydroacoustic Technician

Julie Sellars
Assistant Scale Analyst

Jacqueline Boffey
Hydroacoustic Technician (term)

Holly Anozie
Scale Lab Assistant

Appendix F

Membership Lists for Standing Committees, Panels, Joint Technical Committees and other Appointments as of March 31, 2006

1. STANDING COMMITTEE ON FINANCE AND ADMINISTRATION

Mr. Paul Macgillivray (Vice-Chair)
Mr. Alan Boreham
Mr. Ron Faust

Mr. Rollie Rousseau (Chair)
Mr. W. Ron Allen
Mr. David Bedford
Mr. Dave Cantillon
Mr. Roy Chavera
Mr. Mike Matylewich

Staff

Mr. Don Kowal (ex. Officio)

Editorial Board

Mr. Tim Young

Mr. Dave Cantillon (acting)

Staff

Mr. Don Kowal (ex. Officio)

2. FRASER PANEL

Mr. Paul Ryall (Vice-Chair)
Mr. Murray Chatwin
Mr. Mike Griswold
Mr. Terry Lubzinski
Chief Ken Malloway
Mr. Larry Wick

Mr. John Long (Chair)
Mr. Dave Cantillon
Mr. Robert F. Kehoe
Ms. Lorraine Loomis

FRASER RIVER PANEL - ALTERNATES

Mr. Brian Assu
Mr. Tom Bird
Mr. Randy Brahniuk
Mr. Les Rombough
Mr. Peter Sakich
Mr. Marcel Shepert

Mr. Ronald G. Charles
Mr. Jack R. Giard
Ms. Teresa Scott
Mr. Tim Tynan

3. SOUTHERN PANEL

Mr. Gordon McEachen (Vice-Chair)
Dr. Don Hall
Mr. John Legate
Mr. Jeremy Maynard
Mr. Paul Rickard

Mr. Patrick Pattillo (Chair)
Mr. Burnie Bohn
Mr. Larry Carpenter
Mr. Peter Dygert
Mr. James E. Harp
Mr. Terry Williams

SOUTHERN PANEL - ALTERNATES

Ms. Marilyn Murphy
Mr. Bill Pirie
Mr. Barry Rosenberger
Mr. Errol Sam
Mr. Stan Watterson

Mr. Curt Melcher
Mr. Randy A. Settler
Mr. Andy Whitener
Mr. Keith Wilkinson
Mr. Robert Wunderlich

4. NORTHERN PANEL

Mr. Dave Einarson (Vice-Chair)
Mr. Chris Barnes
Mr. Bill de Greef
Mr. John McCulloch
Mr. John Murray
Mr. Greg Taylor

Mr. Gordon Williams (Chair)
Mr. William F. Auger
Mr. James E. Bacon
Mr. Howard Pendell
Mr. Russell Thomas

NORTHERN PANEL - ALTERNATES

Mr. John Brockley
Mr. Rick Haugan
Ms. Deborah Jeffrey
Ms. Pat Moss
Chief Harry Nyce Sr.
Mr. Bruce Shepherd

Mr. Thomas Brookover
Mr. Arnold Enge
Dr. Jack Helle
Mr. Dennis Longstreth
Mr. Robert M. Thorstenson

5. TRANSBOUNDARY PANEL

Mr. Ronald Chambers
Ms. Cheri Frocklage
Mr. Stephan Jacobs
Mr. Ray Kendel
Mr. Seigi Kriegl
Ms. Lorelei Smith
Mr. John Ward

Dr. John H. Clark (Chair)
Mr. James Becker
Mr. Rod Brown
Mr. Richard Davis
Mr. Peter Hagen

6. STANDING COMMITTEE ON SCIENTIFIC COOPERATION

Dr. Laura Richards (Chair)
Dr. Dick Beamish
Mr. Steve Pennoyer (Vice-Chair)
Dr. David Hankin

7. NORTHERN FUND COMMITTEE

Mr. Dave Einarson (Co-Chair)
Mr. Ron Fowler
Mr. Gordon Zealand
Mr. Jim Balsiger (Co-Chair)
Mr. David Bedford
Mr. Jev Shelton

8. SOUTHERN FUND COMMITTEE

Mr. Wilf Luedke (Co-Chair)
Dr. Don Hall
Mr. Mike Griswold
Mr. Rollie Rousseau (Co-Chair)
Mr. Olney Patt Jr.
Mr. Larry Rutter

9. JOINT TECHNICAL COMMITTEE ON CHINOOK

Dr. Rick McNicol (Co-Chair)
Dr. Gayle Brown
Mr. Roger Dunlop
Mr. Wilf Luedke
Ms. Karen Mathias
Mr. Chuck Parken
Ms. Teresa Ryan
Mr. Julian Sturhahn
Dr. Arlene Tompkins
Mr. Ivan Winther
Mr. Dell Simmons (Co-Chair)
Mr. David Bernard
Mr. John Carlile
Dr. John H. Clark
Mr. Ethan Clemons
Mr. Gary R. Freitag
Mr. Edgar Jones
Dr. Robert Kope
Dr. Qinghua Liu
Mr. Brian Lynch
Ms. Marianne McClure
Mr. Scott McPherson
Dr. Gary S. Morishima
Mr. James F. Packer
Ms. Lisa Seeb
Mr. Rishi Sharma
Mr. Alex C. Wertheimer
Mr. Henry J. Yuen

10. JOINT TECHNICAL COMMITTEE ON COHO

Mr. Wilf Luedke (Co-Chair)
Mr. Richard Bailey
Ms. Diana Dobson
Dr. Blair Holtby
Ms. Karin Mathias
Mr. Chuck Parken
Mr. Kent Simpson
Ms. Melanie Sullivan
Mr. Joe Tadey
Dr. Arlene Tompkins
Mr. Pieter Van Will
Mr. Ken Wilson

Dr. Gary S. Morishima (Co-Chair)
Ms. Carrie Cook-Tabor
Mr. Robert A. Hayman
Mr. Jeff Haymes
Dr. Peter W. Lawson
Mr. Curt Melcher
Mr. Bill Patton
Mr. James B. Scott
Ms. Laurie Weitkamp

(Northern Coho)

Dr. John H. Clark
Ms. Michele Masuda
Mr. Leon D. Shaul

11. JOINT TECHNICAL COMMITTEE ON CHUM

Mr. Leroy Hop Wo (Co-Chair)
Mr. Wilf Luedke
Mr. Clyde Murray
Ms. Melanie Sullivan
Mr. Pieter Van Will

Mr. Nick Lampsakis (Co-Chair)
Ms. Rebecca Bernard
Mr. Thomas Kane
Ms. Amy Seiders
Dr. Gary Winans

12. TECHNICAL COMMITTEE ON DATA SHARING

Mr. Chuck Parken (Co-Chair)
Ms. Lia Bijsterveld
Ms. Sue Lehmann

Dr. Norma Jean Sands (Co-Chair)
Dr. Ken Johnson
Mr. Ron Josephson
Mr. Mike Matylewich
Dr. Gary S. Morishima
Mr. Dick O'Connor
Mrs. Amy Seiders

Working Group on Data Standards

Ms. Kathryn Fraser
Ms. Brenda Ridgway

Dr. Ken Johnson (Co-Chair)
Mr. P. Brodie Cox
Mr. William Johnson
Mr. John Leppink
Mr. Ken Phillipson

13. FRASER RIVER PANEL TECHNICAL COMMITTEE

Mr. Les Jantz (Co-Chair)
Mr. Alan Cass
Mr. Ron Goruk
Mr. Jeff Grout
Mr. Mike Staley

Mr. Gary Graves (Co-Chair)
Mr. Kyle Adicks
Mr. Chris Wright

14. NORTHERN BOUNDARY TECHNICAL COMMITTEE

Mr. David Peacock (Co-Chair)
Mr. Dana Atagi
Mr. Steve Cox-Rogers
Mr. Allen Gottesfeld
Mr. Mark Potyrala

Mr. Glen Oliver (Co-Chair)
Mr. Justin Breese
Mr. Phillip S. Doherty
Mr. William Heard
Mr. Steve Heinl
Ms. Michelle Masuda
Mr. James Seeb
Mr. John Wilcock
Mr. Xinxian Zhang

15. SELECTIVE FISHERY EVALUATION COMMITTEE

Dr. Brent Hargreaves (Co-Chair)
Ms. Sue Lehmann

Dr. Gary S. Morishima (Co-Chair)
Dr. Marianna Alexandersdottir
Ms. Carrie Cook-Tabor
Mr. Harold Geiger
Dr. Annette Hoffmann
Mr. Ken Johnson
Mr. Ron Josephson
Mr. Mark Kimbel
Mr. Greg Mauser
Mr. Doug Milward
Mr. Ron Olson
Mr. Patrick Pattillo
Dr. Norma Jean Sands
Mr. Rishi Sharma
Mr. Dell Simmons

16. TRANSBOUNDARY TECHNICAL COMMITTEE

Mr. Sandy Johnston (Co-Chair)
Mr. Ian Boyce
Mr. Richard Erhardt
Mr. Pete Etherton
Mr. Rick Ferguson
Mr. Bill Waugh

Mr. Scott Kelley (Co-Chair)
Mr. Jim Andel
Mr. William R. Bergmann
Mr. Scott Forbes
Ms. Kathleen A. Jensen
Mr. Edgar Jones
Mr. John Joyce
Mr. Kevin Monagle
Mr. Keith Pahlke
Mr. Gordon Woods

ENHANCEMENT SUB-COMMITTEE

Mr. Pat Milligan (Co-Chair)
Dr. Kim Hyatt
Mr. Paul Rankin

Mr. Ron Josephson (Co-Chair)
Mr. Eric Prestegard
Mr. Garold Pryor
Mr. Steve Reifenstuhl

17. JOINT CHINOOK INTERFACE GROUP

Mr. Gerry Kristianson (Vice-Chair)
Mr. Ron Fowler
Mr. Russ Jones
Mr. Larry Cassidy
Mr. Olney Patt Jr.

18. NATIONAL CORRESPONDENTS

Mr. Alan Boreham
Mr. Dave Cantillon (acting)